

3. Issues and Alternatives

This chapter discusses the issues and alternatives considered and analyzed as part of this Comprehensive Conservation Plan (Plan, Revised Plan) and environmental impact statement (EIS). The chapter presents three significant issues and six alternatives for managing Arctic National Wildlife Refuge (Arctic Refuge, Refuge). Included is the “No Action” alternative (Alternative A) which is the continuation of current management, as detailed in the 1988 Plan (Service 1988a).

3.1 Issues

The U.S. Fish and Wildlife Service (Service) defines an issue as any unsettled matter that requires a management decision. Issues were identified internally by Refuge staff as well as through public comments. All issues identified in scoping were reviewed in a series of workshop discussions involving the Refuge Staff, the State of Alaska and other agency planning team partners, the regional planning chief, and the Refuge supervisor. All identified issues outside the scope of the Plan or that could be resolved through existing laws, regulations, or policies were eliminated from further consideration.

3.1.1 Significant Issues

Significant issues are problems, conflicts, or opportunities we will address in the Plan. A significant issue is one component of an alternative. The Refuge’s role in identifying and analyzing significant issues is to objectively consider a wide range of approaches that could be taken to address each issue. Three significant planning issues were identified for consideration during revision of the Plan:

1. Should one or more areas of the Refuge be recommended for Wilderness designation?
2. Should additional wild and scenic rivers be recommended for inclusion in the National Wild and Scenic Rivers System?
3. How will the Refuge manage Kongakut River visitor use to protect resources and visitor experience?

Refuge staff developed a range of actions (i.e., different options or strategies) for addressing each issue. The regional planning chief, Refuge manager, Refuge supervisor, and regional chief of the Refuge System reviewed and edited the suite of issues. Lastly, the regional director reviewed and approved the issues for inclusion in the Revised Plan and EIS. This section includes a detailed description of the three significant planning issues. Included are a sample of the comments we received from the public on each issue.

3.1.1.1 Wilderness

Issue 1: Should one or more areas of the Refuge be recommended for Wilderness designation?

Currently about 37 percent of Arctic Refuge (7.16 million acres) is designated Wilderness. As part of the comprehensive conservation planning process, the Service reviews lands not designated as Wilderness to determine if they are qualified and suitable to be recommend for

Wilderness designation. This review divided the Refuge's non-Wilderness lands into three Wilderness Study Areas (WSAs): Brooks Range, Porcupine Plateau, and Coastal Plain (Appendix H). All three WSAs were determined to meet the minimum criteria for Wilderness designation. This Plan will decide which, if any, of the units will be recommended for Wilderness designation. Only Congress can designate Wilderness.

Summary of Comments

Nearly all commenters addressed this issue. A primary focus was the coastal plain and the effect Wilderness designation would have on potential oil and gas development there. The primary concern of those opposing or supporting Wilderness designation for this area was that the designation would either preclude development or protect the area from it. The Gwich'in people and others generally supported a Wilderness recommendation for the area because they felt it would provide protection for caribou and other wildlife. The Inupiat people and others generally opposed a Wilderness recommendation for the area because they felt it would limit or preclude economic opportunities and would interfere with subsistence activities.

There were relatively few comments specific to either the Brooks Range or the Porcupine Plateau WSAs. Most wilderness comments not focused on the coastal plain stated that either all or none of the Refuge's non-Wilderness areas should be recommended for designation. Those supporting Wilderness recommendations said Wilderness status would provide needed permanent protection for the Refuge's wildlife, ecological, scientific, recreational, subsistence, and other values. Those opposing Wilderness recommendations said the Refuge or the State currently has enough or too much Wilderness and that Wilderness unnecessarily limits public access and use.

Scoping Comments

"The entire Coastal Plain should be recommended for wilderness designation for its importance to wildlife, symbol of wilderness and subsistence values for future generations."

"The 1002 area of ANWAR should not only continue to be excluded from wilderness designation but it should be open up to responsible on shore oil and gas exploration and development as soon as possible."

"Wilderness status for the 1002 would also deprive the people of Kaktovik, KIC, ASRC, and the North Slope Borough of economic development opportunities there."

"Alaskans firmly believe that we can coexist with nature successfully without any need to lock up the land by imposing no-go designations through wilderness status."

"The only way to guarantee the protection of the Arctic NWR is to permanently protect it with Wilderness designation."

"The CCP plan should recommend the Coastal Plain be proposed wilderness designation to protect the caribou and Gwich'in way of life for future generations."

"Above all, it is my strong conviction that we cannot forgo the chance to protect and keep one of the last places on Earth truly wild"

“Wilderness designation carries with it significant limitations on access and uses that choke off traditional activities.”

“The only way to guarantee the protection of Arctic NWR is to permanently protect it with Wilderness designation.”

“Additional wilderness will do nothing but add red tape to our subsistence lifestyle.”

“I very strongly oppose any wilderness designation for the Coastal Plain of the Arctic National Wildlife Refuge, or for any part of ANWR, period.”

3.1.1.2 Wild and Scenic Rivers

Issue 2: Should additional wild and scenic rivers be recommended for inclusion in the National Wild and Scenic Rivers System?

The Wild and Scenic Rivers Act and agency policy (602 FW 1 and 3) require land managers to identify rivers for wild and scenic river review during land management planning. Twenty waters in Arctic Refuge were evaluated for inclusion in the National Wild and Scenic Rivers System (NWSRS), and 10 rivers were determined to be eligible. All 10 rivers are free-flowing and possess at least one of the following outstandingly remarkable values (ORVs): scenic, recreational, geologic, fish, wildlife, historic, or cultural. A suitability study was conducted for the 10 eligible rivers, and four were preliminarily determined to be suitable. According to the Wild and Scenic Rivers Act, values must “be protected for the benefit and enjoyment of future generations.” Recommending rivers for inclusion in the NWSRS requires the implementation of management prescriptions intended to protect the rivers’ values. Only Congress can designate rivers for inclusion in the NWSRS.

Summary of Comments

Comments that addressed wild and scenic rivers were generally in favor of the Service conducting a review, although we also received comments expressing opposition. Comments ranged from descriptions of specific rivers or areas in rivers, to discussions of the review process and requirements under the Wild and Scenic Rivers Act. We also received comments addressing the relationship of wild and scenic rivers to designated Wilderness.

Scoping Comments

“The Ramparts of the Porcupine River have been recommended as national natural landmarks. This portion of the Porcupine Plateau is thought by many to be one of the state’s outstanding scenic features.”

“You should, on the wild river side of things, please focus on the rivers within the non-wilderness portions of the refuge.... Wild rivers inside wilderness really don’t offer much additional protection and therefore the focus should be on those that may require additional protection.”

“The USFWS should conduct a suitability review of the 24 identified rivers, especially for the Hulahula and Kongakut Rivers for wild river designation could aid in protecting river values. In general, the USFWS should recommend to Congress wild river designation for those rivers where user capacities and developments are concerns.”

“I also recommend Wild and Scenic River status for the north flowing rivers in the Refuge.”

“The Canning, the Hulahula and the Kongakut are pristine, wild rivers that should be recommended for Wild and Scenic River status. I have never seen a river more qualified for wild river status than the Canning and the Marsh Fork of the Canning.”

“The Refuge is in the awkward position of having a dream team of all-star rivers. Nearly every river in the Refuge would qualify for W and S status. If you have the time start listing them.”

“The Commission is also opposed to studies and/or recommendations for additional wild and scenic rivers within the Arctic Refuge. As we have stated above on the wilderness study issue, existing statutory and regulatory authorities are more than adequate to protect all rivers and water within the refuge. In fact, one of the purposes of the refuge is to ensure ‘water quality and necessary water quantity within the refuge.’ We see no need to conduct wild and scenic river studies that will divert staff resources from other management issues.”



3.1.1.3 Kongakut River Visitor Management

Issue 3: How will the Refuge manage Kongakut River visitor use to protect resources and visitor experience?

The Kongakut River, on the north side of the Brooks Range, offers spectacular views from the mountains to the coastal plain and an opportunity to witness migrating caribou; contains a variety of unique geologic features; and receives nearly one-quarter (24 percent) of the documented visitors to the Refuge. Its entire extent is in designated Wilderness.

Visitor feedback indicates growing concern about Wilderness character of the Kongakut River. Group crowding; user conflicts; excessive over-flights; fire rings, tent rings, and human waste accumulations at concentrated access points and popular camp areas; hardening or impairment of fragile riparian and tundra habitats; and increased footprint of aircraft landing areas are having a negative effect on the Refuge's Wilderness and biological resources.

Internal scoping of Refuge staff resulted in the following list of potential Kongakut River visitor management strategies and actions:

- develop targeted messages to inform visitors about preferred camping and hiking practices
- increase rehabilitation efforts at impaired and impacted sites
- stagger visitor use and reduce the number of groups during peak season
- disperse commuter aircraft overflights in the Kongakut River valley
- initiate an adaptive management framework for monitoring recreation impacts
- develop management strategies through comprehensive, Refuge-wide, visitor use management step-down planning

Summary of Comments

The vast majority of public comments specific to the Kongakut River suggested a need for greater management efforts along the river corridor. Requests for increased management efforts for the Kongakut River were focused on retaining—or restoring—the quality of visitor experience. Many comments suggested specific ways to improve visitor experiences, particularly by addressing crowding. Some specific suggestions included modifying group size limits, implementing a lottery system for float trips, and spreading out launch days. Other concerns raised by the public included the need to designate the Kongakut as a wild river and to address potential impacts to river access landing areas.

Scoping Comments

"I do have some concerns about the impacts of recreational traffic in some areas, in particular along the Kongakut corridor...you'll see a lot of traffic and there are places that are popular campsites where it's kind of hard to pick up a rock and not find a gift from previous visitors to that campsite. And that's pretty disturbing to come across."

"The Arctic Refuge did a great thing when it introduced regulations for commercial operators on the...Kongakut. It's time to codify these regs and revisit them. I would like to see group size limited to 8, including guides. I'd like to see a limit on the number of trips each company can run on each river, to one trip per river per month, and then have a reservation system that spreads out launch dates so there's a 2-3 day buffer between launch

dates. This would eliminate the large number of trips that tends to launch between June 11 and 21 each summer, creating a large number of groups on the river at the same time.”

“I suspect that some of the more popular rivers, such as the Kongakut...are losing their lonely nature. Implement permitting or other controls to prevent overuse and preserve the solitude of those who are there.”

“Visitor use has greatly increased from the years when I first visited. This is especially true of the major river valleys such as the Kongakut...I strongly feel that the Conservation Plan should incorporate restrictions on visitor use, particularly in the major river valleys by float trip parties.”

3.1.2 Issues Identified During Scoping but Eliminated from Detailed Study

The following discussion briefly describes issues and actions the staff considered but subsequently eliminated from detailed study and National Environmental Policy Act (NEPA) analysis through this Plan. Issues raised by the public and the agency included development, policy, ecological, management, visitor use, and administrative concerns. Many of these issues are important to the management of the Refuge and will be deferred to and incorporated into various step-down plans (see Chapter 6). For a more detailed discussion of the 34 issues considered but eliminated, please refer to Appendix D.

Development Issues – A major issue identified by the public is oil and gas development on the Refuge’s coastal plain. Some commenters, including the State of Alaska, asked that the Plan address oil and gas leasing or development scenarios in the range of alternatives. The Service has no administrative authority over oil and gas development. Section 1003 of the Alaska National Interest Lands Conservation Act (ANILCA) specifically prohibits oil and gas leasing, development, and production anywhere on Arctic Refuge until Congress takes action to change this provision.

Policy Issues – Other members of the public expressed concern that the Service is violating ANILCA by conducting wilderness and wild and scenic river reviews. Service policy directs the Refuge to conduct these reviews. They do not violate ANILCA because the reviews do not constitute a withdrawal, nor are they being conducted for the sole purpose of establishing a conservation system unit. The reviews are part of the periodic comprehensive conservation planning process required by ANILCA 304(g)(1), and they are consistent with the requirement in ANILCA 304(g)(2)(B) to consider “the special values of the Refuge as well as any other archeological, cultural, ecological, geological, historical, paleontological, scenic, or wilderness value....” For more on development and policy issues refer to Appendix D, Sections D.1 and D.2.

Ecological Issues – Climate change is expected to continue to affect Refuge resources and the associated human environment for the foreseeable future. There are few actions the Refuge can take to manage the effects of climate change. Rather than incorporate climate change into the alternatives, the Refuge established several objectives to evaluate climate change through scientific research and monitoring and the sharing of traditional knowledge in local communities (see Chapter 2, Section 2.1). Concerns were also expressed about changes in fire behavior, the Service’s response (or lack thereof) to fires, and smoke impacts. These concerns are best addressed through a Fire Management Plan (FMP) so as to provide maximum flexibility in Refuge response to wildfires.

The Revised Plan does not provide a range of management alternatives for the Refuge's Public Use Natural Area (PUNA) and two Research Natural Areas (RNAs). We decided existing management, in combination with Refuge purposes, afford a high degree of protection for the features and values in these specially designated areas and that no additional management guidance is needed. Similarly, the Plan does not provide a range of management options for the Refuge's three wild rivers. Their management would instead be addressed through step-down management plans called Comprehensive River Management Plans (see Chapter 2, Section 2.1.3). The Revised Plan provides an opportunity for us to collaboratively study the ecology and natural heritage values of the Refuge's Marine Protected Area (MPA), which was established in 2009, and enhance public recognition of the MPA through environmental education and outreach (Chapter 2, Section 2.1.3).

Visitor Use Issues – Numerous issues were raised about visitor use of the Refuge, the impacts such use is having on Refuge resources and visitor experience, and perceived or real conflicts between different user groups. Identified public use-related issues included crowding; human waste accumulations, different standards for different user groups, how the Refuge interacts with the public, group size, conflicts among and between commercial and private users, preference for guided or non-guided visitors, and aircraft landing impacts and overflight effects. These issues, while relevant and important planning issues, are complex and most effectively addressed through a Visitor Use Management Plan (see Chapter 2, Section 2.1.5, Objective 5.4). For more on visitor use issues refer to Appendix D, Section D.5.

Administrative Issues – Some commenters expressed concern over the administrative facility at Lake Peters and asked the Refuge to remove it. The Refuge may take action to modify or remove the facility's buildings by conducting an environmental analysis separate from the Revised Plan (see Chapter 2, Section 2.1.2, Objective 2.5). Other people wanted the Refuge to establish one or more commercial-free zones and/or an area free from mechanization where solitude and natural quiet are protected. The Refuge gave strong consideration to this issue and developed a range of options for the alternatives. However, the Refuge did not have the necessary data to adequately describe effects on access, private aircraft use, big-game hunting, and scientific research. Further, there were unresolved questions about specific ANILCA requirements for establishment of such an area. The issue was deferred to a Wilderness Stewardship Plan where these questions can be more fully explored (see Chapter 2, Section 2.1.2, Objective 2.4).

3.1.3 Actions Considered for Significant Issues

Actions are different management options or strategies that could be employed to address a planning issue. Each of the three significant planning issues considered in the alternatives presents a range of actions. However, some of the ideas generated by the public and Refuge staff for Wilderness, wild and scenic rivers, and Kongakut River visitor use management were not carried forward. These in effect constitute different alternatives that were eliminated from detailed study. DOI regulations require us to consider those reasonable alternatives that meet the purpose and need of the proposed action and address one or more significant issues (43 CFR 46.415). However, when there are potentially a very large number of alternatives, then we are to disclose those alternatives eliminated from detailed study with a brief discussion of the reasons for eliminating them (40 CFR 1502.14 and 43 CFR 46.420). In this section, we identify the actions considered for the three significant planning issues but not carried into the alternatives. The primary reason for eliminating these options was to keep the number of alternatives at a manageable number.

3.1.3.1 Wilderness Actions not in the Alternatives

The Wilderness Review (Appendix H) established three Wilderness Study Areas (WSAs): Brooks Range, Porcupine Plateau, and Coastal Plain. Five options are presented in Alternatives A through F. To keep the number of alternatives to a manageable number, we considered but did not carry forward the following options:

- The Porcupine Plateau WSA was not recommended by itself, nor was it put forward in combination with the Coastal Plain WSA.
- The Brooks Range WSA was not put forward in combination with the Coastal Plain WSA.
- A different land management category for areas adjacent to Arctic Village and Kaktovik (e.g., Moderate Management) was not introduced.

3.1.3.2 Wild River Actions not in the Alternatives

The wild and scenic river review (Appendix I) identified 10 rivers that are eligible for inclusion in the NWSRS. These rivers were examined for suitability; four were determined suitable for inclusion in the NWSRS. To keep the number of alternatives to a manageable number, we considered but did not carry forward the following options:

- recommend only those suitable rivers and river segments in designated Wilderness
- recommend only those suitable rivers and river segments outside designated Wilderness
- recommend only the Kongakut River
- recommend all suitable rivers except the Kongakut River
- recommend only suitable rivers with a particular value, such as “recreational,” “cultural,” or “fish”
- do not recommend any rivers but develop a river management plan for all rivers in the Refuge, including suitable rivers
- limit access or user numbers on suitable rivers
- limit commercial and/or private recreational activity on suitable rivers

3.1.3.3 Kongakut River Actions not in the Alternatives

The staff considered numerous actions and strategies to address public concerns about the Kongakut River. Some of these actions could be addressed through the Plan. Others are best handled through a Refuge-wide Visitor Use Management Plan (VUMP) or Wilderness Stewardship Plan (WSP) to avoid the displacement of issues from the Kongakut River to other areas of the Refuge. Still others would require rule making. We chose to eliminate the following options from the alternatives in order to keep the number of alternatives to a manageable number and to present only options that would not require the promulgation of regulations:

- restrict use during the two peak use periods
- restrict use during the entire open water season
- restrict the number of commercial trips each company can do on the river
- limit launch dates
- develop a commercial prospectus in which commercial operators tell the Refuge how they will improve conditions on the Kongakut
- require the removal of human waste
- require mandatory, site-specific, trip orientation and certification
- prohibit camping at drop-off and pick-up locations
- limit the number of nights allowed at specific camping areas
- designate camp sites
- establish group size limits for all users



3.2 Alternatives

Multiple elements combine to create each of the alternatives:

- Goals and objectives
- Management categories
- Management policies and guidelines
- Different strategies to respond to issues, public concerns, and opportunities identified during the planning process

The alternatives presented in this Plan were designed to meet the purposes and goals of Arctic Refuge, achieve the mission of the Service, fulfill the purpose and need for the planning document, and respond to key issues and concerns that were identified during public and internal scoping. The alternatives described in this chapter were developed to comply with NEPA, ANILCA and other pertinent laws, and the regulations and directives applied to implement those laws. The alternatives provide a basis for comparing potential impacts and help managers make better decisions regarding the physical, biological, economic, and social effects that could result from proposed actions and activities on Refuge lands.

NEPA directs the Service to develop a range of reasonable alternatives and consider those alternatives in an equal manner. NEPA also requires alternatives considered in an EIS meet the purpose and need for the proposed action. Section 1003 of ANILCA specifically prohibits oil and gas leasing, development, and production anywhere on Arctic Refuge. Until Congress takes action to change this provision, the Service will not permit oil and gas leasing in the Refuge under any of the alternatives in the Plan.

The Service decided that six alternatives would address the three significant planning issues and provide a reasonable range for approaching Refuge management for the next 15 years. The Refuge's goals, objectives, management categories, and management guidelines (Chapter 2) are considered to be the heart of the Plan. They explain the approach the Service would like to take to manage the Refuge.

Alternative A represents the current management situation at Arctic Refuge; it is also called the "No Action" alternative. Alternative A would continue management direction from the 1988 Plan and would not adopt any of the management goals, objectives, policies, or guidelines identified in Chapter 2 of the Revised Plan. Alternative F is similar to Alternative A, but it would adopt all the proposed management objectives (Chapter 2, Section 2.1) and the updated management policies and guidelines identified in Chapter 2, Sections 2.3, 2.4, and 2.5.

Alternatives B through E would adopt the Refuge management objectives, management policies, and guidelines but differ in how they would address the three significant planning issues. All six alternatives would maintain three management categories for Refuge lands: Minimal, Wilderness, and Wild River (see Chapter 2, Section 2.3).

3.2.1 Management Actions Common to All Alternatives

This section identifies some of the key components to be included in this Plan regardless of which alternative is selected. These management actions are either already occurring and will continue, or are currently in the process of being implemented and will be carried forward as part of this Plan. These actions address common issues; public concerns; and Refuge purposes, goals, and objectives as described in this Plan.

3.2.1.1 Environmental Conservation and Monitoring

Standard Practice

Arctic Refuge will continue to be managed in accordance with existing laws, Executive orders, regulations, and policies that govern how the Service administers and operates the Refuge System. Accordingly, the Service and the Refuge will:

- monitor and address the effects of accelerating climate change at a landscape level
- monitor, protect, and maintain fish and wildlife populations, habitat values, ecological processes, and biological diversity
- maintain water quality and quantity throughout the Refuge and protect the values of the Wind, Ivishak, and Sheenjek wild river corridors
- provide opportunities to pursue research on wildlife and habitats and conduct inventory and monitoring projects
- protect and monitor cultural and historical sites
- protect designated Wilderness and maintain the wilderness characteristics of the Refuge
- provide and support law enforcement on Refuge lands

Migratory Birds

Arctic Refuge provides vital breeding and staging habitat for large numbers of migratory waterfowl and shorebirds (Chapter 4, Section 4.3.6, and Appendix F). The Migratory Bird Treaty Act was amended in 1996 to legalize subsistence hunting and taking of eggs of migratory birds in Alaska during spring and summer. This amendment led to the establishment of the Alaska Migratory Bird Co-management Council. Regardless of the alternative selected, the Service and the Refuge will continue to work with the Alaska Migratory Bird Co-management Council and other partners to collect accurate and extensive baseline data on species distribution and abundance and subsistence harvests to ensure that healthy populations are maintained, subsistence opportunities provided, and the Service fulfills its international obligation to comply with the Migratory Bird Treaty Act.

Porcupine Caribou Herd

The government of Canada and the government of the United States of America are signatories of the International Porcupine Caribou Herd Conservation Agreement (Department of the Interior 1987).

The 1987 "Agreement between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd" gave authority to initiate an eight-member International Porcupine Caribou Board made up of four members from Canada and four from the United States. This board makes recommendations to the

regulatory agencies for conservation actions regarding the Porcupine caribou herd. The current board includes the deputy commissioner of the Alaska Department of Fish and Game (ADFG), the Service's Alaska regional director, and representatives from the villages of Venetie and Kaktovik.

Invasive Species

Invasive species are plants and animals that are not native to an area but become established and have adverse effects on native species. In the arctic, invasive species are thought to be a relatively new and growing phenomenon, associated with human activities and climate change. Invasive plants may be introduced to Arctic Refuge from the Dalton Highway corridor and villages. Refuge visitors can spread seeds on their clothing, recreational gear, domestic animals such as dogs or pack stock, and aircraft or watercraft. Non-native wildlife species may expand their ranges to include Refuge lands due to changes in habitats associated with climate change. The Refuge will continue to conduct invasive-species surveillance and may implement means to prevent, control, or eradicate these species if necessary and practicable.

Environmental Contaminants

The Service conducted a study of contaminants in water, sediments, and fish in Arctic Refuge in 1988 and 1989 and recommended that further work be conducted to establish baseline data for concentrations of heavy metals (Snyder-Conn and Lubinski 1993). The baseline data indicated that except for well-used harbor areas around Kaktovik, contaminants concentrations were reflective of a relatively pristine and remote Arctic region (Snyder-Conn and Lubinski 1993).

Current and future planned activities have potential to create sources of contamination, including spills or development activities outside of Refuge boundaries. Under all management alternatives, Arctic Refuge would work with the Service's Environmental Contaminants Program and other appropriate regulatory agencies, such as the U.S. Environmental Protection Agency (EPA) and the State of Alaska Department of Environmental Conservation (ADEC), to document baseline contaminant concentrations and establish a targeted plan for long-term monitoring of contaminant levels.

Yukon River Salmon

On January 28, 1985, the government of Canada and the government of the United States of America signed the Pacific Salmon Treaty. In 2002, the treaty was amended to include the Yukon River Salmon Agreement. Salmon in the Yukon River watershed are a shared resource between Canada and Alaska. Under all management alternatives, the Service and Arctic Refuge would continue to cooperatively manage salmon in the Yukon River watershed (including the Porcupine, Coleen, and Sheenjek Rivers) according to the agreement and any future revisions or amendments to the agreement.



3.2.1.2 Public Use and Access

Standard Practice

The Service and Arctic Refuge will continue to:

- allow appropriate and compatible private and commercial uses
- allow methods of public access, including for rural residents engaged in subsistence uses, currently allowed by law and regulation
- provide land status information concerning lands within the Refuge boundary
- provide information about 17(b) easements on Native corporation land that allow public access to public lands
- provide opportunities to pursue social, cultural, and economic research
- provide the opportunity for continued subsistence uses by federally qualified subsistence users

Subsistence

One of the four purposes for which the Refuge was established is to provide the opportunity for continued subsistence uses by federally qualified subsistence users in a manner consistent with (i) the conservation of fish and wildlife populations and habitats in their natural diversity, and (ii) the fulfillment of international treaty obligations with respect to fish and wildlife and their habitats. Under all alternatives, ANILCA Title VIII will apply providing a number of

provisions to ensure that, consistent with other Refuge purposes, rural residents can continue to use Refuge lands and resources to meet their physical, economic, traditional, cultural, and social needs. Regardless of the alternative selected, the Service will ensure that rural residents engaged in subsistence uses shall have reasonable access to subsistence resources on Refuge lands and waters subject to reasonable regulations.

The Federal Subsistence Board reserved the Arctic Village Sheep Management Area for federally qualified subsistence users from the villages of Arctic Village, Fort Yukon, Venetie, Kaktovik, and Chalkyitsik to minimize conflicts and competition with general Dall's sheep hunters. The Arctic Village Sheep Management Area is currently closed to general hunting of Dall's sheep but remains open to hunting of other big game in accordance with State game regulations. Big-game guide use area ARC 12, which surrounds Arctic Village and includes the Arctic Village Sheep Management Area, will continue to remain vacant.

Recreation and Outreach

Hunting, fishing, wildlife observation and photography, environmental education, and interpretation are the six priority public uses identified in the National Wildlife Refuge System Improvement Act of 1997. The Service and the Refuge will emphasize these uses where compatible with Refuge purposes. Regardless of the alternative selected, the recreational opportunities that currently exist at Arctic Refuge will continue to be provided.

3.2.1.3 Funding and Personnel Requirements (Alternatives A-F)

All current management programs would continue under all alternatives. The base operational budget (\$3,286,000 in fiscal year 2011) would continue, with minor changes based on annual budget allocations from Congress. The Refuge currently has a staff of 34 employees: 22 permanent employees and one full-time term employee; one permanent part-time employee; five temporary intermittent employees; and three to five temporary seasonal employees. This level of staffing would continue should Alternative A be selected.

3.2.1.4 Funding and Personnel Requirements (Alternative B-F)

In addition to the funding requirements listed in Section 3.2.1.3, implementing Refuge management goals and objectives (see Chapter 2, Section 2.1) would require additional staffing and funding under Alternatives B-F. No additional costs would be incurred from the management actions specific to Alternatives B-F. The base Refuge operational budget of \$3,286,000 (in fiscal year 2011) would increase to \$4,044,000 with additional funds to cover 3.5 full-time permanent employees, one temporary intermittent employee, and additional inventory and management resources required by new programs, as described below. Additional one-time funds of \$230,000 would be needed to cover term positions and identified projects.

Staffing Budget Needs beyond Current Level: (\$445,000 per year):

1. Public Use Manager/Native Liaison (GS-11/12 permanent): This position would oversee the larger visitor and public use programs of the Refuge. The person in this position would provide oversight and management of: the Refuge's education and outreach programs for a full range of publics (local and national); commercial use permitting of service providers; resource monitoring programs for visitor and public use; liaison, community relations, and formal consultations with villages; and the development of various public and visitor use planning efforts. The position's cost would be \$130,000 (\$75,000 salary; \$25,000 benefits; and \$30,000 operational costs).
2. Biological Technician (GS-5/7 permanent): This position would assist with field projects, logistics, data management, report preparation, etc. The position's cost would be \$80,000 (\$45,000 salary; \$15,000 benefits; and \$20,000 operational costs).
3. Visitor Services Specialist (GS-5/7 permanent): The position would provide operational support for the commercial visitor use permit program and would provide meaningful information and guidance to commercial services providers, visiting publics, and local communities on appropriate use of the Refuge, its conservation issues and needs, and best visitor and use practices. This position would work within primary hub access communities with high visitor use, such as Kaktovik, Arctic Village, and Coldfoot. The position's cost would be \$80,000 (\$45,000 salary; \$15,000 benefits; and \$20,000 operational costs).
4. Law Enforcement Officer/Pilot (GS-12, existing permanent position): The action alternatives would require fully funding the existing Arctic Refuge officer position at its current grade level with an adequate operational budget. The additional operating costs that would be required are \$20,000.
5. Law Enforcement Officer/Pilot (GS-11/12 permanent): This position would be a shared resource for three Fairbanks-based Refuges (half time to Arctic Refuge) and would be stationed remotely (i.e., in Coldfoot). The individual would perform a full range of resource protection duties across the three Refuges, including public education and outreach regarding conservation needs and Federal and state regulations. The officer/pilot would be capable of accessing and patrolling by various means, including boat, plane, and snowmachine, and would have the capacity to work effectively in cross cultural environments and with diverse visitor and users. Costs would include all mandatory training for pilots and law enforcement officers. The position's full-time cost is \$160,000 (\$75,000 salary; \$40,000 benefits; and \$45,000 operational costs). The position's cost to Arctic Refuge would be \$80,000.
6. Refuge Information Technician (GS 5/7 temporary intermittent): An additional Refuge Information Technician for the village of Venetie would be shared with the Yukon Flats National Wildlife Refuge to enhance communications with the village and the tribal government. The position's cost is \$13,000 (\$12,000 salary and \$1,000 benefits).
7. Biological Technicians (GS-5/7 seasonal): Averaged over the life of the Plan, the action alternatives would require four additional temporary seasonal biological technicians per year, each operating under a three-month (field season) appointment. The total annual cost for all four of these positions would be \$55,000 (\$40,000 total salary; \$10,000 total benefits; and \$5,000 total operational costs).

Additional Program Driven Funding Requirements (\$300,000 per year):

1. To adequately support inventory, monitoring, and research efforts of current staff, including: the study of climate change effects; the acquisition or replacement of equipment and supplies; biometrician support contracts; additional base to support ecological inventory and monitoring (phased in over 10 years); and cooperative monitoring and research programs.

One-Time Term Positions and Project Funding Requirements (\$230,000):

One-time costs associated with the goals and objectives listed in Chapter 2, Section 2.1, apply to alternatives B-F and are broken down as follows:

1. Recreational Planner (GS-12, full-time term (3-5 years)): A functional and capable planner is needed to lead several major Refuge planning efforts: a Visitor Use Management Plan, a Wilderness Stewardship Plan, three Comprehensive River Management Plans, an Integrated Cultural Resources Management Plan, a Land Protection Plan, and other step-down plans identified in the Revised Plan. The position would cost \$130,000 (\$75,000 salary; \$25,000 benefits; and \$30,000 operational costs). A regional office planner on detail to Arctic Refuge could fill this position.
2. \$50,000 estimated to conduct the Visitor Study in 2013.
3. \$50,000 estimated to upgrade the Marion Creek residences at Coldfoot for year-round use.

3.2.2 Alternative A – Current Management

Alternative A is the “No Action” Alternative. It describes current management of Arctic Refuge, provides the baseline against which to compare Alternatives B through F, and is required by NEPA. Under Alternative A, general management of Arctic Refuge would continue to follow the 1988 Plan (Service 1988a) and associated record of decision (Service 1988b), as amended by the Fire Management Plan (FMP) for Arctic Refuge (Service 2008b), which was a step-down plan to the 1988 Plan.

With the exceptions of the Refuge land management categories, much of the management direction described in the 1988 Plan for Arctic Refuge is outdated. However, under Alternative A, the updated version of the Refuge management policies and guidelines described in Chapter 2 (Sections 2.3, 2.4, and 2.5) would not take effect. Table 3-2 of this chapter (Section 3.3.2) discusses the major differences between the 1988 management direction and the updated version of the policies and guidelines for Refuge management. Table 3-3 identifies key differences between Minimal and Wilderness management.

3.2.2.1 Alternative A - Objectives

The 1988 Plan did not include any goals or objectives for Refuge management. Under Alternative A, management would continue as detailed in the 1988 Plan, thus objectives would not be adopted if Alternative A is selected.

3.2.2.2 Alternative A - Management Categories

Under Alternative A, the original land management categories, as described in the 1988 Plan, would continue to apply to lands in Arctic Refuge. Lands administered by Arctic Refuge would fall into three categories as follows: Minimal Management (12.3 million acres), Wilderness Management (7.07 million acres)¹, and Wild River Management (536,000 acres)² (Map 3-1).

3.2.2.3 Alternative A - Specific Management by Major Issue

The following discussion describes how Alternative A would address the significant issues identified during internal and public scoping.

Wilderness

No new areas would be recommended for Wilderness designation.

¹ This acreage value excludes wild river corridors. Wild rivers within designated Wilderness are managed under Wild River Management, not Wilderness Management.

² Acreages in this Plan are derived from many sources and may not agree with previously published values, including the draft Revised Plan. For more information, please refer to “A Note about Acreages” in the front pages of this volume.

Wild and Scenic Rivers

No new rivers would be recommended for wild river designation. The Refuge would use existing management tools to maintain values on the Atigun, Hulahula, Kongakut, and Marsh Fork Canning Rivers.

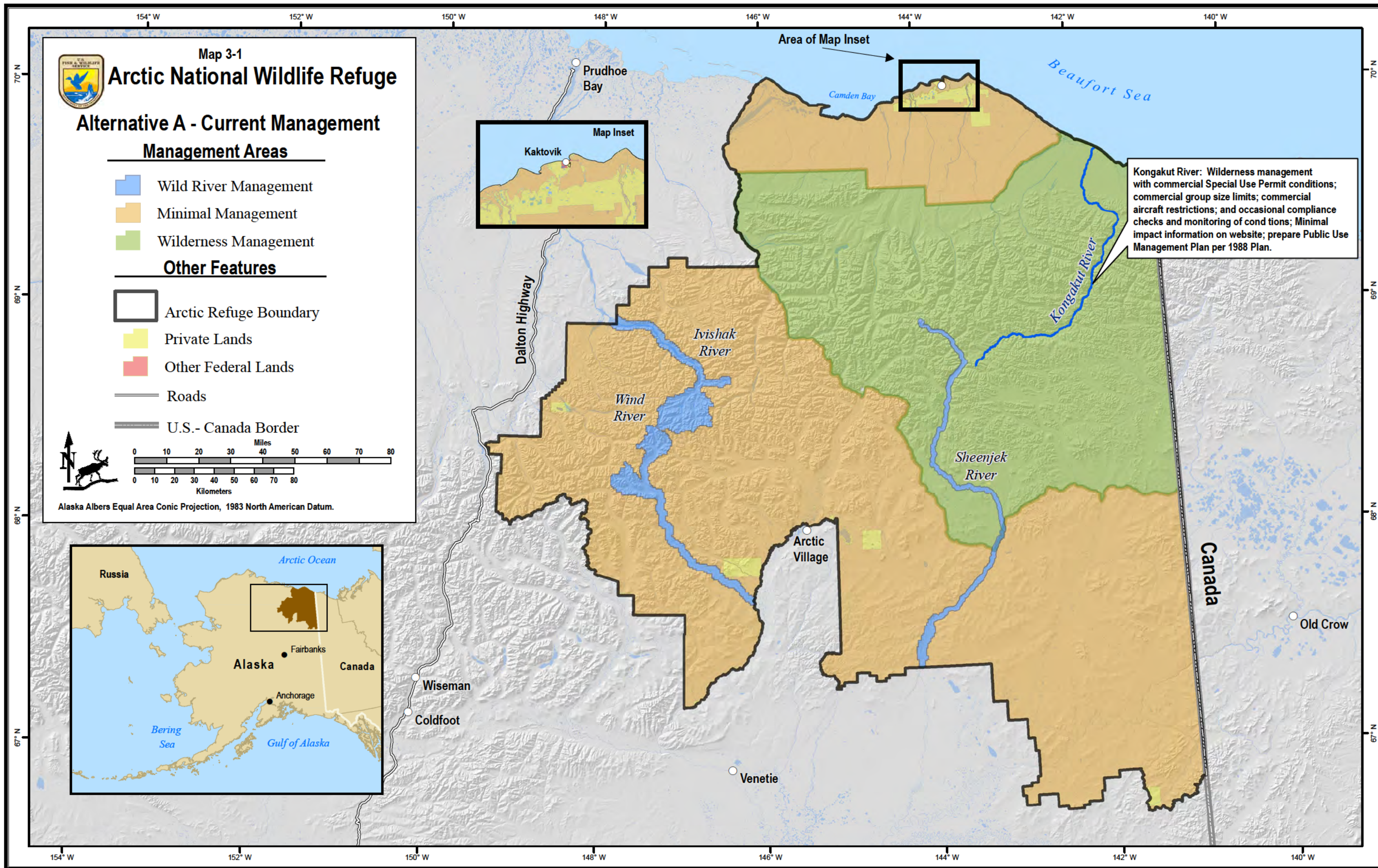
Kongakut River Visitor Management

Under Alternative A, the Service would continue to manage visitor use on the Kongakut River to provide opportunities for adventure and primitive, unconfined recreational experiences in an undeveloped setting, while protecting the area's natural conditions and resources. Current management strategies include:

- Commercial service providers are required to have special use permits and permit compliance checks occur occasionally.
- Under permit conditions, commercial operators are limited to 7 hikers and 10 floaters and one commercial group on the Kongakut River at a time.
- Group size is not regulated for non-guided visitors, but it is recommended that they follow commercial limits.
- In the Kongakut Valley, commercial air operator special use permit holders are required, under permit conditions, to limit airplane landings to non-vegetated surfaces only. Commercial air operators are also requested to follow the Federal Aviation Administration (FAA) advisory to maintain a minimum of 2,000 feet above ground level for flight operations and to refrain from intentionally flying low over camps, people, or wildlife.
- Information on low-impact camping, minimum impact techniques (such as those promoted by the Leave No Trace Center for Outdoor Ethics), and other best practices is available on the Refuge's website.
- Monitoring of physical and social conditions related to visitor use occurs occasionally, and campsite conditions are monitored periodically.
- A Public Use Management Plan would be prepared, as directed by the 1988 Comprehensive Conservation Plan.

3.2.2.4 Alternative A - Funding and Personnel Requirements

All current management programs would continue under Alternative A. The base operational budget (\$3,286,000 in fiscal year 2011) would continue, with periodic adjustments to balance the offsets of fixed costs and inflation. The Refuge currently has a staff of 34 employees: 23 permanent or term full-time; 1 permanent part-time; 5 temporary intermittent; 3-5 temporary seasonals. This level of staffing would continue should Alternative A be selected.



3.2.3 *Alternative B*

Under Alternative B, the management policies and guidelines for Arctic Refuge (Chapter 2, Sections 2.3, 2.4, and 2.5), would take effect (see Section 3.3.2 for a comparison of the proposed management policies and guidelines to those in the 1988 Plan). The Refuge vision, goals, and objectives, described in Chapter 1, Section 1.6 and Chapter 2, Section 2.1 would also be adopted under Alternative B.

Although most of the general management direction described in Alternative A would continue, some specific directions and actions occurring under Alternative A would change under Alternative B. Management actions under Alternative B are discussed here.

3.2.3.1 *Alternative B - Objectives*

Alternative B would adopt all the objectives described in Chapter 2, Section 2.1.

3.2.3.2 *Alternative B - Management Categories*

Under Alternative B, lands in Arctic Refuge would be managed under the Minimal, Wilderness, and Wild River Management categories described in Chapter 2, Section 2.3. The alternative would maintain the same acreages in each of the management categories as Alternative A (current management): Minimal Management (12.3 million acres), Wilderness Management (7.07 million acres)³, and Wild River Management (536,000 acres). If Congress were to designate the Brooks Range WSA as Wilderness, there would be a reduction of 5.48 million acres of Minimal Management and an increase of the same amount of acres of lands under Wilderness Management. Similarly, if the recommended rivers were designated by Congress for inclusion in the NWSRS, there would be a reduction of approximately 53,000 acres of Minimal Management and 117,000 acres of Wilderness Management. There would be an increase of 170,000 acres of Wild River Management.

3.2.3.3 *Alternative B - Specific Management by Major Issue*

Wilderness

The Brooks Range WSA would be recommended for Wilderness designation (Map 3-2).

Wild and Scenic Rivers

The Hulahula, Kongakut, and Marsh Fork Canning rivers would be recommended for inclusion in the NWSRS as wild rivers. The Refuge would use existing management tools to maintain values for the Atigun River.

³ This acreage value excludes wild river corridors. Wild rivers within designated Wilderness are managed under Wild River Management, not Wilderness Management.

Kongakut River Visitor Management

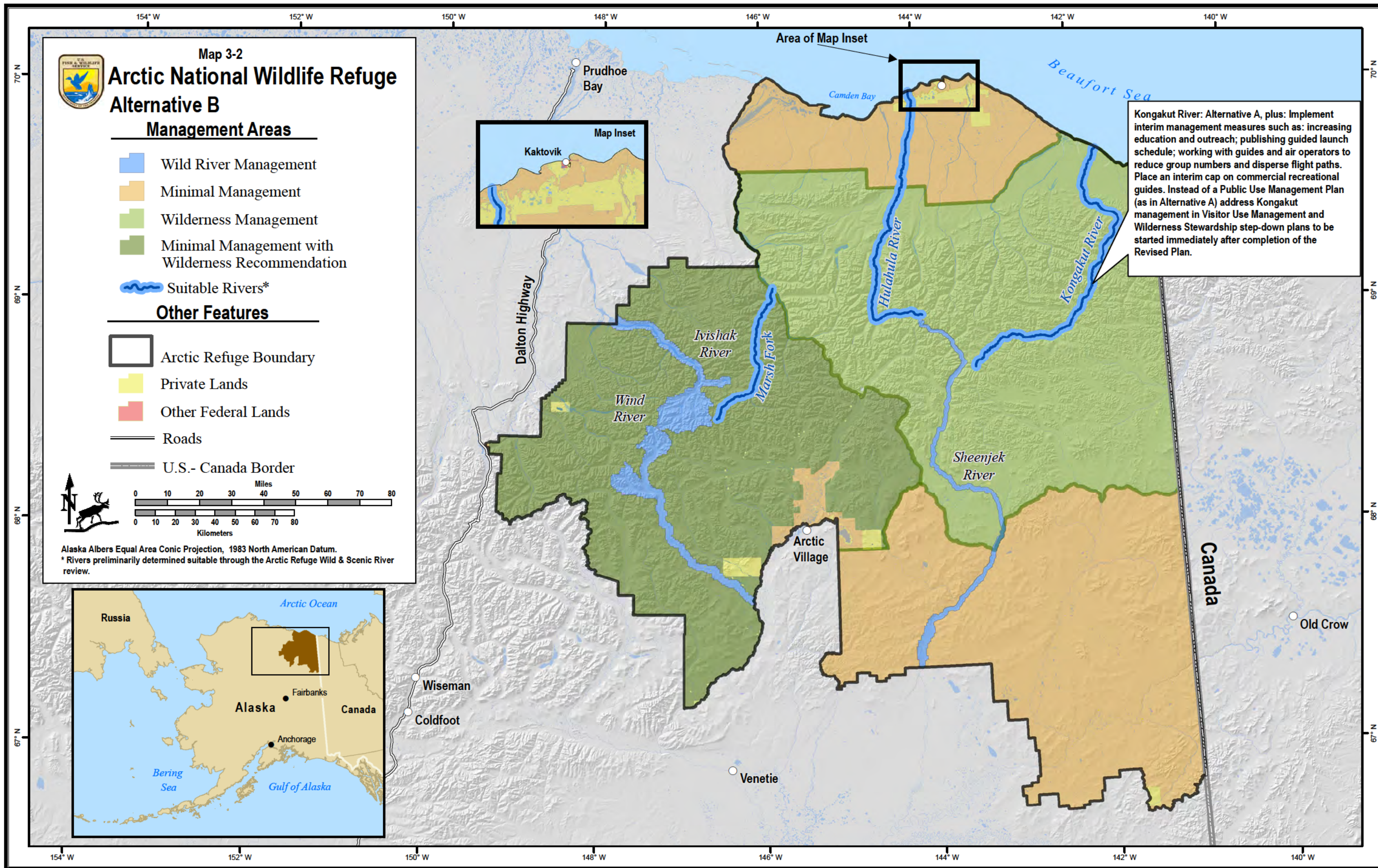
Under Alternative B, the Service would continue to implement all current management actions described in Alternative A to manage visitor use on the Kongakut River.

In addition to current management, Refuge managers would immediately initiate step-down planning processes following a signed record of decision for this Revised Plan. These step-down planning processes would be compliant with NEPA (including public involvement) and would produce a Visitor Use Management Plan (VUMP) and a Wilderness Stewardship Plan (WSP). These plans would replace the Public Use Plan prescribed in Alternative A.

The VUMP and WSP would address visitor use management issues and concerns for the Kongakut River identified by the Service and the public during this comprehensive conservation planning process and any additional issues identified during the step-down planning processes. Based on what the Service heard from the public during the development of this Revised Plan, managers at Arctic Refuge expect the VUMP and WSP to address crowding, resource degradation, loss of Wilderness character, and other impacts to visitor experience and the Kongakut River valley. Refuge managers anticipate the step-down plans would consider a range of reasonable management actions to address these issues, including (but not limited to): group size limits; limited allocation between commercial and private recreation; a permit system; regulations to control the timing of visits; restrictions on aircraft landings; rules for disposal of human waste; hardening sites for aircraft landings and camping; mandatory use of bear-resistant food containers; site rehabilitation; and increased outreach to and communication with visitors before they begin their trips to the Kongakut River. Managers will use the VUMP to determine tools and schedules for monitoring desired conditions and experiences and to identify actions for restoring conditions where necessary.

Under Alternative B, Refuge managers would implement interim management measures while they complete the VUMP and WSP. Interim measures would be replaced by the new management direction prescribed in the VUMP and WSP. In the interim, Refuge managers would:

- Work with guides to reduce the number of groups on the Kongakut River during heavy use periods (late June and mid-August) by encouraging them to schedule clients voluntarily outside of the heavy use period.
- Work with commercial air operators to disperse commuting flight paths in and out of the Kongakut River valley, subject to safe aircraft operation.
- Publish schedules of proposed guided launch dates and historical patterns of visitor use on the Refuge's website to help guides and visitors plan their trips.
- Develop additional outreach materials for all Kongakut River users (floaters, hikers, hunters, and others) with targeted messages that explain preferred practices and strategies for minimizing impacts, such as proper disposal of human waste, how to avoid disturbing wildlife, and how to alleviate crowding.
- Conduct occasional on-site checks to educate users and ensure their compliance with terms and conditions of special use permits and existing Federal and State regulations.
- Monitoring would continue to be conducted occasionally but would be modified to include criteria that specifically evaluate the effectiveness of management actions.
- Identify, evaluate, and rehabilitate impaired and impacted sites on the Kongakut River.



Under Alternative B, the Service also would put in place an interim cap on use by commercial recreational guides on the Kongakut River starting in 2013 and expiring at the end of 2016 or when the VUMP is implemented, whichever occurs first. Only those guides who operated on the Kongakut River in at least one year during the period 2007 through 2011 would be allowed to operate on the Kongakut River during this interim period. For each year of the interim period, those guides authorized to operate on the Kongakut River would be restricted to the average number of client use days they reported for the Kongakut River during the period 2007 through 2011. For example, if a guide had trips on the Kongakut River in 2007, 2008, and 2011, that guide's cap would be the number of client use days for those three years added together and divided by three. The result of this calculation is the average client use days reported for that guide's operation on the Kongakut River during this five-year period.

3.2.3.4 Alternative B - Funding and Personnel Requirements

Alternative B would adopt the goals and objectives outlined in Chapter 2, Section 2.1. To accomplish this work, base operational costs would increase to \$4,044,000 to cover 3.5 full-time permanent employees, one temporary intermittent employee, four temporary seasonal employees, and associated program driven activities. Additionally, \$230,000 would be required for term positions and one-time project costs (see Sections 3.2.1.3 and 3.2.1.4 for details).

3.2.4 *Alternative C*

Alternative C would adopt the Refuge management policies and guidelines presented in Chapter 2, Sections 2.3, 2.4, and 2.5. The Refuge vision, goals, and objectives, described in Chapter 1, Section 1.6 and Chapter 2, Section 2.1, would go into effect under Alternative C.

Although most of the general management direction described in Alternative A would continue, some specific directions and actions occurring under Alternative A would change under Alternative C. Management actions under Alternative C, are discussed here.

3.2.4.1 *Alternative C - Objectives*

Alternative C would adopt all the objectives described in Chapter 2, Section 2.1.

3.2.4.2 *Alternative C - Management Categories*

Under Alternative C, lands in Arctic Refuge would be managed under the Minimal, Wilderness, and Wild River Management categories described in Chapter 2, Section 2.3. The alternative would maintain the same acreages in each of the management categories as Alternative A (current management): Minimal Management (12.3 million acres), Wilderness Management (7.07 million acres)⁴, and Wild River Management (536,000 acres). If Congress were to designate the Coastal Plain WSA as Wilderness, there would be a reduction of 1.57 million acres of Minimal Management and an increase of the same amount of acres of lands under Wilderness Management. Similarly, if Congress were to designate the rivers recommended under Alternative C for inclusion in the NWSRS, there would be a further reduction of approximately 7,100 acres of Minimal Management and an increase of 7,100 acres of Wild River Management.

3.2.4.3 *Alternative C - Specific Management by Major Issue*

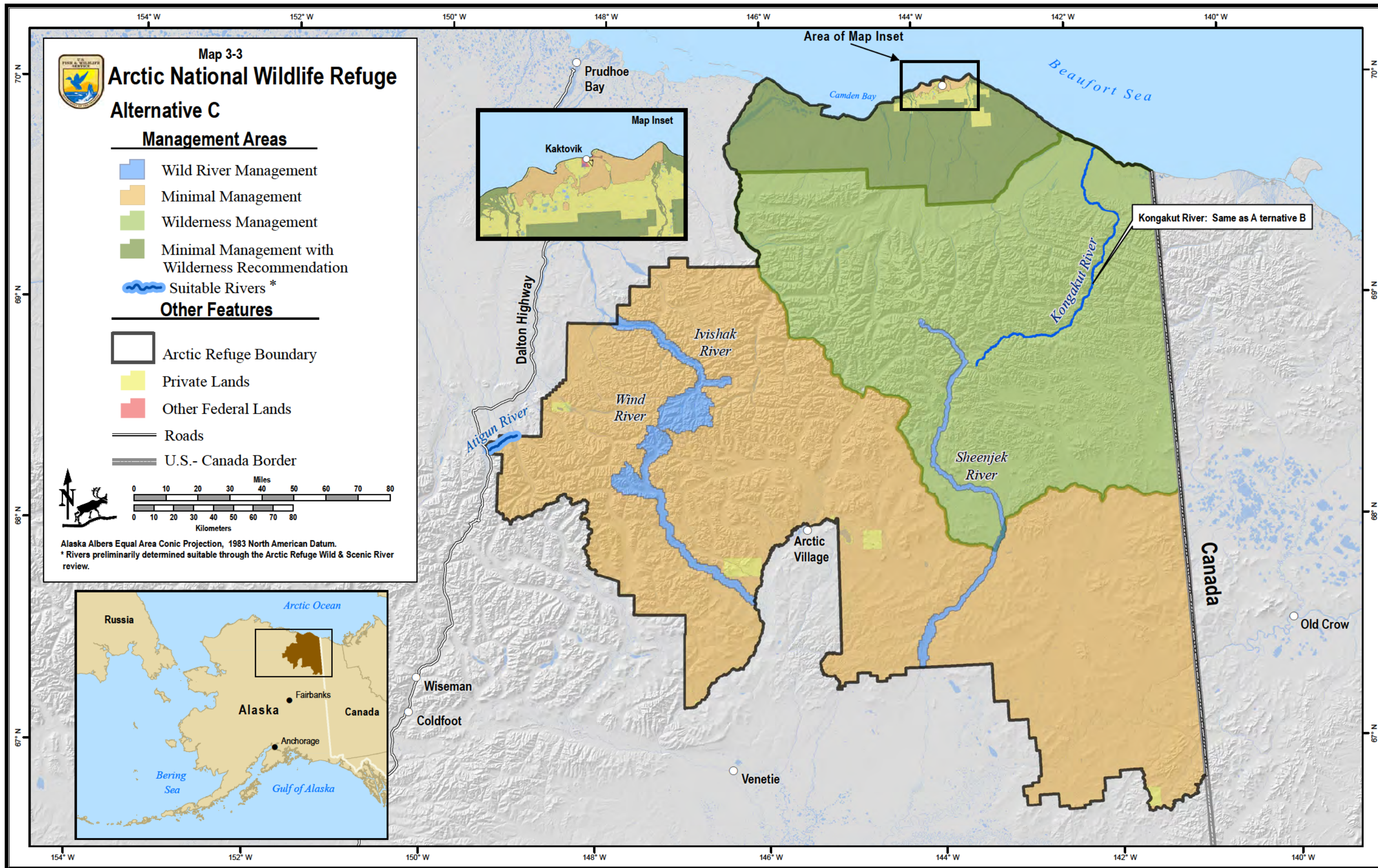
Wilderness

Under this alternative, the Coastal Plain WSA would be recommended for Wilderness designation (Map 3-3).

Wild and Scenic Rivers

The Atigun River would be recommended for inclusion in the NWSRS as a wild river. The Refuge would use existing management tools to maintain values for the Hulahula, Kongakut, and Marsh Fork Canning rivers.

⁴ This acreage value excludes wild river corridors. Wild rivers within designated Wilderness are managed under Wild River Management, not Wilderness Management.



Kongakut River Visitor Management

Under Alternative C, the Service would implement all the management actions described in Alternative B to manage visitor use on the Kongakut River. These actions include: preparing a Visitor Use Management Plan (VUMP) and a Wilderness Stewardship Plan (WSP) immediately following approval of this Revised Plan; implementing a series of interim management measures until the VUMP and WSP are completed; and placing an interim cap on commercial recreational guides on the Kongakut River starting in 2013 and expiring at the end of 2016 or when the VUMP is implemented, whichever comes first.

3.2.4.4 Alternative C - Funding and Personnel Requirements

Alternative C would adopt the goals and objectives outlined in Chapter 2, Section 2.1. To accomplish this work, base operational costs would increase to \$4,044,000 to cover 3.5 full-time permanent employees, one temporary intermittent employee, four temporary seasonal employees, and associated program driven activities. Additionally, \$230,000 would be required for term positions and one-time project costs (see Sections 3.2.1.3 and 3.2.1.4 for details).

3.2.5 Alternative D

Alternative D would adopt the Refuge management policies and guidelines presented in Chapter 2, Sections 2.3, 2.4, and 2.5. The Refuge vision, goals, and objectives, described in Chapter 1, Section 1.6 and Chapter 2, Section 2.1, would go in effect under Alternative D.

Although most of the general management direction described in Alternative A would continue, some specific directions and actions occurring under Alternative A would change under Alternative D. Management actions under Alternative D are discussed here.

3.2.5.1 Alternative D - Objectives

Alternative D would adopt all the objectives described in Chapter 2, Section 2.1.

3.2.5.2 Alternative D - Management Categories

Under Alternative D, lands in Arctic Refuge would be managed under the Minimal, Wilderness, and Wild River Management categories described in Chapter 2, Section 2.3. The alternative would maintain the same acreages in each of the management categories as Alternative A (current management): Minimal Management (12.3 million acres), Wilderness Management (7.07 million acres)⁵, and Wild River Management (536,000 acres). If Congress were to designate the Brooks Range and Porcupine Plateau WSAs as Wilderness, there would be a reduction of 11.04 million acres of Minimal Management and an increase of the same amount of acres of lands under Wilderness Management. Similarly, if recommended rivers were designated by Congress for inclusion in the NWSRS, there would be a further reduction of approximately 59,000 acres of Minimal Management and 117,000 acres of Wilderness Management. There would be an increase of 176,000 acres of Wild River Management.

3.2.5.3 Alternative D - Specific Management by Major Issue

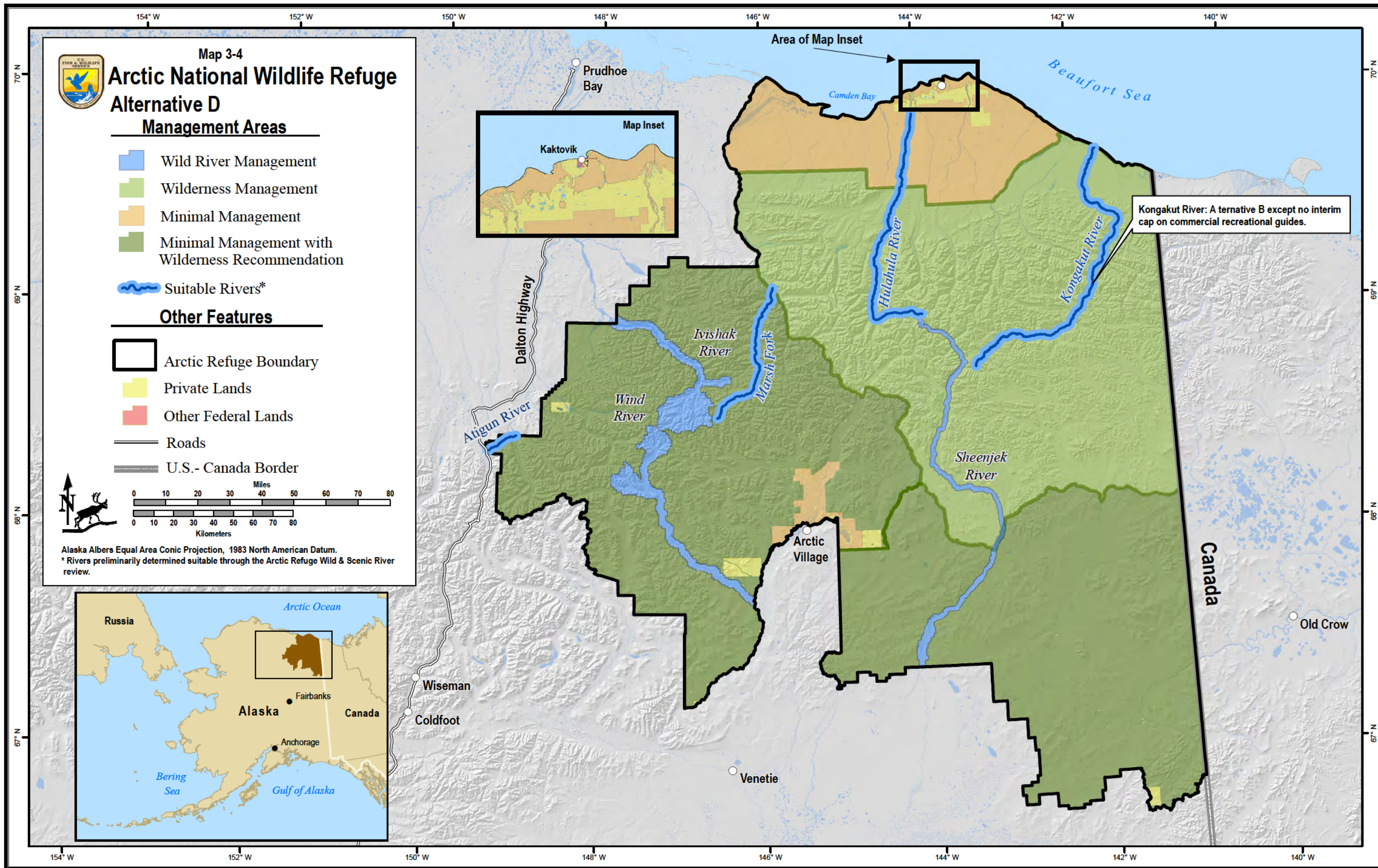
Wilderness

Under this alternative, the Brooks Range and Porcupine Plateau WSAs would be recommended for Wilderness designation (Map 3-4).

Wild and Scenic Rivers

The Atigun, Hulahula, Kongakut, and Marsh Fork Canning rivers would be recommended for inclusion in the NWSRS as wild rivers. Only those portions of the Hulahula River managed by the Refuge would be included in the recommendation.

⁵ This acreage value excludes wild river corridors. Wild rivers within designated Wilderness are managed under Wild River Management, not Wilderness Management.



Kongakut River Visitor Management

Under Alternative D, the Service would implement all the management actions described in Alternative B to manage visitor use on the Kongakut River, except the Service would not place an interim cap on commercial recreational guides on the Kongakut River. The actions that would be implemented under this alternative include preparing a Visitor Use Management Plan (VUMP) and a Wilderness Stewardship Plan (WSP) immediately following the record of decision of this Revised Plan, and implementing a series of interim management measures until the VUMP and WSP are completed.

3.2.5.4 Alternative D - Funding and Personnel Requirements

Alternative D would adopt the goals and objectives outlined in Chapter 2, Section 2.1. To accomplish this work, base operational costs would increase to \$4,044,000 to cover 3.5 full-time permanent employees, one temporary intermittent employee, four temporary seasonal employees, and associated program driven activities. Additionally, \$230,000 would be required for term positions and one-time project costs (see Sections 3.2.1.3 and 3.2.1.4 for details).

3.2.6 *Alternative E*

Alternative E would adopt the Refuge management policies and guidelines presented in Chapter 2, Sections 2.3, 2.4, and 2.5. The Refuge vision, goals, and objectives, described in Chapter 1, Section 1.6 and Chapter 2, Section 2.1, would also go in effect under Alternative E.

Although most of the general management direction described in Alternative A would continue, some specific directions and actions occurring under Alternative A would change under Alternative E. Management actions under Alternative E are discussed here.

3.2.6.1 *Alternative E - Objectives*

Alternative E would adopt all the objectives described in Chapter 2, Section 2.1.

3.2.6.2 *Alternative E - Management Categories*

Under Alternative E, lands in Arctic Refuge would be managed under the Minimal, Wilderness, and Wild River Management categories described in Chapter 2, Section 2.3. The alternative would maintain the same acreages in each of the management categories as Alternative A (current management): Minimal Management (12.3 million acres), Wilderness Management (7.07 million acres)⁶, and Wild River Management (536,000 acres). If Congress were to designate the Brooks Range, Porcupine Plateau, and Coastal Plain WSAs as Wilderness, there would be a reduction of 11.65 million acres of Minimal Management, and the acres of lands under Wilderness Management would increase by the same amount. If rivers recommended under this alternative were designated as wild rivers by Congress, there would be a further reduction of 64,000 acres of Minimal Management and 117,000 acres of Wilderness Management. There would be an increase of 180,000 acres of Wild River Management.

3.2.6.3 *Alternative E - Specific Management by Major Issue*

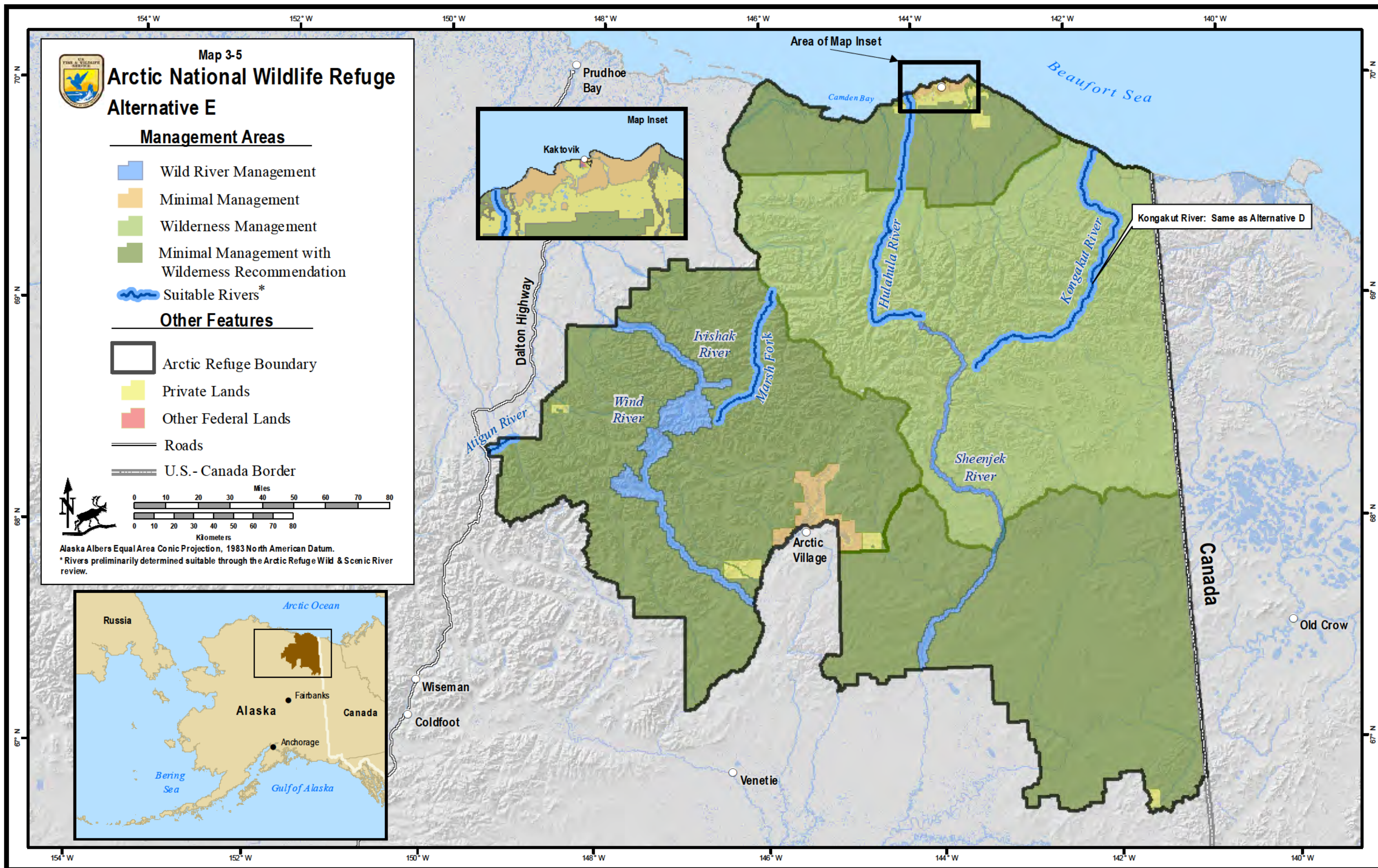
Wilderness

Under this alternative, the Brooks Range, Porcupine Plateau, and Coastal Plain WSAs would be recommended for Wilderness designation (Map 3-5).

Wild and Scenic Rivers

The Atigun, Hulahula, Kongakut, and Marsh Fork Canning rivers would be recommended for inclusion in the NWSRS as wild rivers.

⁶ This acreage value excludes wild river corridors. Wild rivers within designated Wilderness are managed under Wild River Management, not Wilderness Management.



Kongakut River Visitor Management

Under Alternative E, the Service would implement all management actions described in Alternative D to manage visitor use on the Kongakut River. These actions include preparing a Visitor Use Management Plan (VUMP) and a Wilderness Stewardship Plan (WSP) immediately following approval of this Revised Plan, and implementing a series of interim management measures until the VUMP and WSP are completed.

3.2.6.4 Alternative E - Funding and Personnel Requirements

Alternative E would adopt the goals and objectives outlined in Chapter 2, Section 2.1. To accomplish this work, base operational costs would increase to \$4,044,000 to cover 3.5 full-time permanent employees, one temporary intermittent employee, four temporary seasonal employees, and associated program driven activities. Additionally, \$230,000 would be required for term positions and one-time project costs (see Sections 3.2.1.3 and 3.2.1.4 for details).

3.2.7 Alternative F

Alternative F would adopt the Refuge management policies and guidelines presented in Chapter 2, Sections 2.3, 2.4, and 2.5, and the Refuge vision, goals, and objectives, described in Chapter 1, Section 1.6 and Chapter 2, Section 2.1. Although most of the general management direction described in Alternative A would continue, some specific directions and actions occurring under Alternative A would change under Alternative F. Management actions under Alternative F are discussed here.

3.2.7.1 Alternative F - Objectives

Alternative F would adopt all the objectives described in Chapter 2, Section 2.1.

3.2.7.2 Alternative F - Management Categories

Under Alternative F (Map 3-6), lands in Arctic Refuge would be managed under the Minimal, Wilderness, and Wild River Management categories described in Chapter 2, Section 2.3. The alternative would maintain the same acreages in each of the management categories as Alternative A (current management): Minimal Management (12.3 million acres), Wilderness Management (7.07 million acres)⁷, and Wild River Management (536,000 million acres).

3.2.7.3 Alternative F - Specific Management by Major Issue

Wilderness

As under Alternative A, no new areas would be recommended for Wilderness designation.

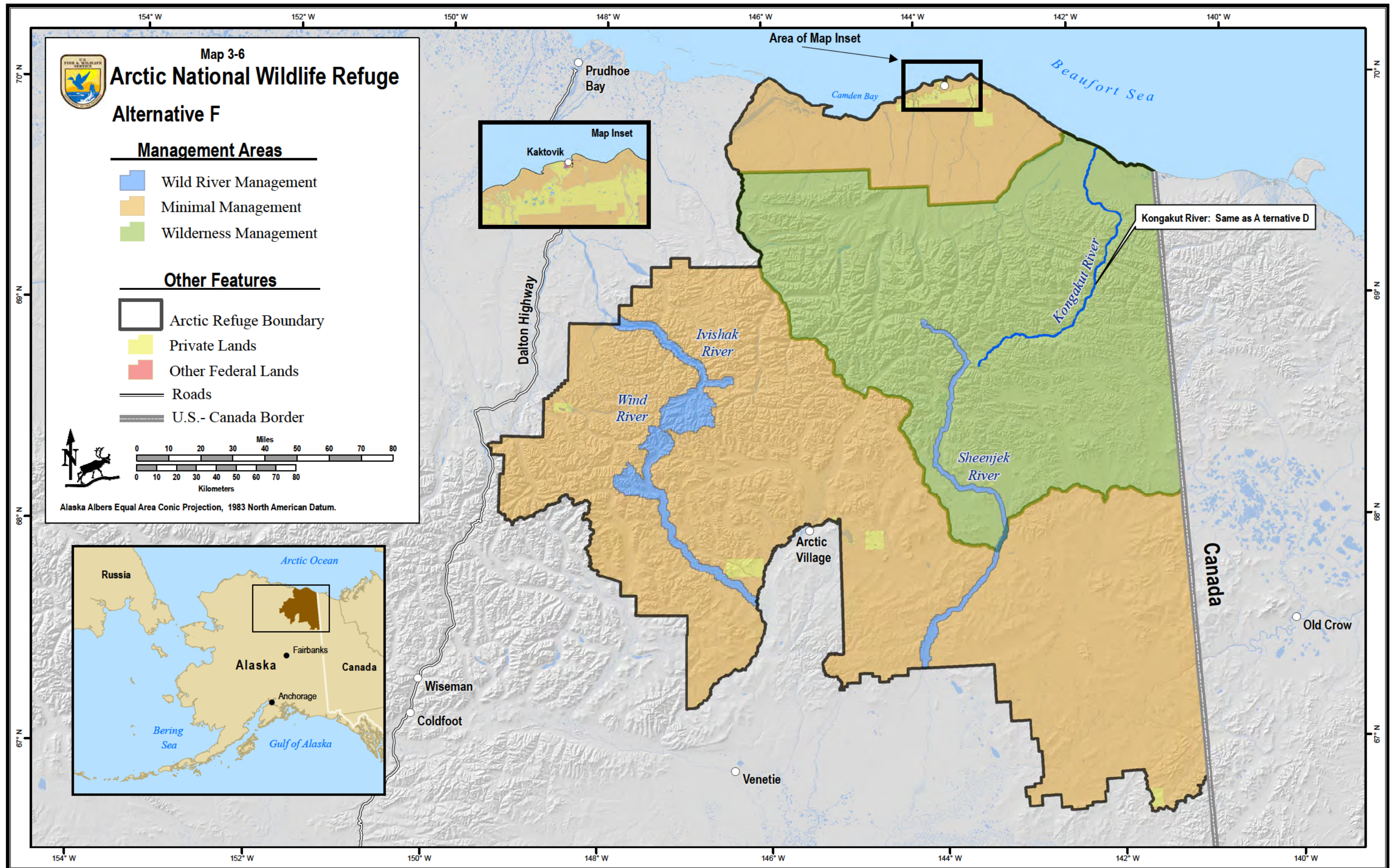
Wild and Scenic Rivers

As under Alternative A, no new rivers would be recommended for wild river designation. The Refuge would use existing management tools to maintain values on the Atigun, Hulahula, Kongakut, and Marsh Fork Canning rivers.

Kongakut River Visitor Management

Under Alternative F, the Service would implement all management actions described in Alternative D to manage visitor use on the Kongakut River. These actions include preparing a Visitor Use Management Plan (VUMP) and a Wilderness Stewardship Plan (WSP) immediately following approval of this Revised Plan, and implementing a series of interim management measures until the VUMP and WSP are completed.

⁷ This acreage value excludes wild river corridors. Wild rivers within designated Wilderness are managed under Wild River Management, not Wilderness Management.



Alternative F - Funding and Personnel Requirements

Alternative F would adopt the goals and objectives outlined in Chapter 2, Section 2.1. To accomplish this work, base operational costs would increase to \$4,044,000 to cover 3.5 full-time permanent employees, one temporary intermittent employee, four temporary seasonal employees, and associated program driven activities. Additionally, \$230,000 would be required for term positions and one-time project costs (see Sections 3.2.1.3 and 3.2.1.4 for details).



3.3 Comparison of the Alternatives

3.3.1 *Summary of Alternatives by Major Issues*

Table 3-1 compares the six alternatives by the three significant planning issues identified in scoping. The table also compares the alternatives by Refuge budgetary and staffing needs required for implementation.

3.3.2 *Comparison of Old and New Management Policies and Guidelines*

This discussion compares the Refuge's management policies and guidelines presented in Chapter 2, Table 2-1 (which apply to Alternatives B, C, D, E, and F) and the management directions from the 1988 Plan (that applies to Alternative A). Direct comparison of the management guidelines is difficult because the organization of the management guideline tables and levels of detail provided by various categories of actions differ substantially between the 1988 Plan and Revised Plan. For example, the 1988 Plan had very detailed descriptions of fisheries management activities and facilities, and the proposed management policy and guidelines in this Plan (Chapter 2, Sections 2.3 through 2.5) do not. Table 3-2 provides a side-by-side comparison of the two sets of management guidelines. Wording changes that do not change management intent are not displayed. A detailed comparison of specific wording from the 1988 Plan as modified with the new policies and guidelines in Chapter 2, Table 2-1 is filed in the administrative record for this Plan.

The 1988 Plan for Arctic Refuge describes five management categories: Intensive, Moderate, Minimal, Wild River, and Wilderness. The 1988 Plan adopted three of the management categories for the management of Refuge lands: Minimal, Wild River, and Wilderness. The current Plan describes management policies and guidelines for the same five categories, and lands will be assigned to the same three categories: Minimal, Wild River and Wilderness Management. None of the alternatives in this Revised Plan assign Refuge lands to the Intensive or Moderate Management categories. Lands recommended in this Plan for Wilderness designation will continue to be managed under the Minimal Management category. Rivers recommended for wild river designation will be managed according to the current underlying management category: Minimal Management for the Atigun, Marsh Fork Canning, and lower Hulahula rivers; and Wilderness Management for the Kongakut and upper Hulahula rivers. Only if Congress were to designate recommended lands to the National Wilderness Preservation System (NWPS) or rivers to the National Wild and Scenic Rivers System would management shift to the Wilderness or Wild River Management categories.

Table 3-2 compares major differences—by management category—between the 1988 Plan and the proposed management policies and guidelines in this Revised Plan. If a specific management category is not identified, the new policies and guidelines would apply to all management categories.

Table 3-1. Comparison of alternatives by major planning issue and budget and staff requirements.

Issue	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
Issue 1: Wilderness						
Should additional Wilderness Study Areas be recommended for inclusion in the National Wilderness Preservation System, and if so, which areas?	No new wilderness recommended.	Recommend the Brooks Range Wilderness Study Area.	Recommend the Coastal Plain Wilderness Study Area.	Recommend the Brooks Range and Porcupine Plateau Wilderness Study Areas.	Recommend the Brooks Range, Porcupine Plateau, and Coastal Plain Wilderness Study Areas.	Same as Alternative A
Issue 2: Wild and Scenic Rivers						
Should additional rivers be recommended for inclusion in the National Wild and Scenic Rivers System (NWSRS), and if so, which rivers?	No rivers recommended. Use existing management tools to maintain values on the Atigun, Hulahula, Kongakut, and Marsh Fork Canning rivers.	Recommend the Hulahula, Kongakut, and Marsh Fork Canning rivers. Use existing management tools to maintain values on the Atigun River.	Recommend the Atigun River. Use existing management tools to maintain values on the Hulahula, Kongakut, and Marsh Fork Canning rivers.	Recommend the Atigun, Kongakut, and Marsh Fork Canning rivers, and those portions of the Hulahula River managed by the Refuge.	Recommend the Atigun, Hulahula, Kongakut, and Marsh Fork Canning rivers.	Same as Alternative A
Issue 3: Kongakut River Visitor Use						
How will the Refuge manage Kongakut River visitor use to protect natural resources and visitor experience?	<ul style="list-style-type: none">▪ Group size limits exist for guided groups (7 hikers, 10 floaters)▪ No group size limits for non-guided visitors▪ Information on minimum impact camping practices is available on the Refuge’s web site▪ Commercial service providers have Special Use Permits (SUPs) with occasional compliance checks▪ Monitoring of physical and social conditions occurs occasionally▪ Visitor impacts are monitored periodically▪ On-site permit compliance checks are done infrequently▪ In the Kongakut River valley, air operator permit holders are required to limit landings to non-vegetated surfaces and requested to follow all FAA advisories during flight operations▪ Prepare a Public Use Management Plan (as required by the 1988 Plan)	<p>Same as Alternative A, and:</p> <ul style="list-style-type: none">▪ Step-down plans (Visitor Use Management and Wilderness Stewardship) initiated immediately following approval of the Revised Plan▪ Step-down plans to address Kongakut River management issues identified by the public during the Revised Plan planning process, including:<ul style="list-style-type: none">○ crowding○ resource degradation○ impacts to wilderness characteristics○ site rehabilitation○ communications to visitors about impacts, resource issues, etc. prior to their trips○ monitoring tools and schedules▪ The following additional interim measures would be implemented pending completion of the step-down plans:<ul style="list-style-type: none">○ Work with guides to reduce number of groups during heavy use periods by using alternative scheduling practices○ Work with air operators to disperse commuting flight paths in and out of the Kongakut River valley,	Same as Alternative B	<p>Same as Alternative B, except:</p> <ul style="list-style-type: none">▪ No interim cap would be set on commercial recreational guides on the Kongakut River	Same as Alternative D	Same as Alternative D

Issue	Alternative A (No Action)	Alternative B	Alternative C	Alternative D	Alternative E	Alternative F
		<div>subject to safe aircraft operation</div> <div><div><div>○ Publish schedule of proposed guided launch dates and historical visitor use patterns</div><div>○ Develop additional outreach materials for users, with targeted messages aimed at minimizing impacts such as proper waste disposal, avoiding wildlife impacts, and alleviating crowding</div><div>○ Enforce permit conditions and Refuge regulations by increased occasional on-site checks</div><div>○ Visitor impacts monitored periodically, but focused on management effectiveness</div><div>○ Identify, evaluate, and rehabilitate degraded sites</div></div><div>▪ Set an interim cap on commercial recreational guides on the Kongakut River starting in 2013 and expiring at the end of 2016, or when the Visitor Use Management Plan is implemented, whichever is first</div><div>▪ Specifics of the cap: for each year of the interim period, recreational guide businesses authorized to operate on the Kongakut River would be restricted to the average number of client use days they reported for their operation on the Kongakut River for those years they operated on the river from 2007 through 2011.</div></div>				
Budget and Staffing Needs						
Permanent Full-time Employees	22	25.5	25.5	25.5	25.5	25.5
Permanent Part-time Employees	1	1	1	1	1	1
Full-time Term Employees	1	1	1	1	1	1
Temporary Intermittent	5	6	6	6	6	6
Temporary Seasonal	3-5	7-9	7-9	7-9	7-9	7-9
Base Costs	\$3,286,004	\$4,044,000	\$4,044,000	\$4,044,000	\$4,044,000	\$4,044,000
One-time Costs	n/a	\$230,000	\$230,000	\$230,000	\$230,000	\$230,000

* The 0.5 represents a full time permanent employee working half-time for Arctic Refuge

Table 3-2. Differences between the new management policies and guidelines proposed in this Revised Plan (Alternatives B, C, D, E, and F), and those in the 1988 Plan (Alternative A).

Management Topic	Alternative A: 1988 Plan	Alternatives B, C, D, E, & F: Revised Plan	Comments
Research and Management Facilities: Administrative facilities	<u>Permitted</u> in Minimal, Moderate and Intensive Management	<u>May be allowed</u> in Minimal, Moderate, and Intensive Management	See section 2.4.21.1
Research and Management Facilities: Fish weirs	Wild River Management: May be permitted on a case-by-case basis subject to NEPA compliance and Refuge compatibility determination, <u>except permanent facilities not normally permitted</u>	<u>May be authorized</u> in Wild River Management	
Habitat Management: Using mechanical means such as cutting, crushing, or mowing of vegetation; water control structures; fencing; artificial nest structures	Compared with Habitat Improvement, Mechanical Manipulation: <u>May be permitted</u> in Minimal Management subject to appropriate Plan revision	<u>Not allowed</u> in Minimal Management with exceptions	For exceptions, see sections 2.3.3, 2.3.4, 2.3.5, and 2.4.20
Habitat Management: Using hand tools to remove, reduce, or modify hazardous plant fuels or exotic plant species, or to modify habitats (e.g., remove beaver dams)	Compared with Minor Habitat Improvements such as: <i>nest devices and temporary habitat actions</i> In Wilderness, Wild River, and Minimal Management: <u>may be permitted</u> subject to NEPA compliance, and Refuge compatibility. For Wilderness only, a Wilderness Minimum Requirement Analysis is also required.	<u>May be allowed</u>	see sections 2.3.4, and 2.4.20
Habitat Management: Using chemicals to remove or control non-native species (compared with chemical habitat modification for fishery management)	<u>May be permitted</u> on case-by-case basis subject to NEPA compliance and Refuge compatibility. In Wilderness and Wild River categories, <u>permanent facilities not normally permitted</u>	<u>May be allowed</u>	See sections 2.4.11.1 and 2.4.12.8, Service Manual 620 FW 1

Management Topic	Alternative A: 1988 Plan	Alternatives B, C, D, E, & F: Revised Plan	Comments
Fishery Enhancement Facilities	Minimal Management — <u>May be permitted</u> on a case-by-case basis subject to NEPA compliance and Refuge compatibility	<u>Not allowed in Minimal Management</u>	See section 2.4.12.10
Pest Management and Disease Prevention and Control	Compared with Pest Control: <u>Normally will not occur</u> except to control exotic species; native species may be controlled where severe resource danger is likely or where safety is jeopardized	<u>May be allowed</u>	See section 2.4.12.8
Other Domestic Animals (including horses, certified weed-free feed required)	<u>Permitted for traditional activities</u> , subject to reasonable regulation	<u>Allowed</u> (certified weed-free feed required)	Certified weed-free feed required for all alternatives in this Plan but not required in 1988 Plan
Off-road Vehicle (All-Terrain Vehicles): Includes air boats and air-cushion vehicles	<u>Not permitted for public use</u> in Wilderness, Wild River, and Minimal Management Moderate and Intensive Management: Permitted only on designated routes or areas; <u>air boats and air-cushion boats not permitted</u>	<u>Not allowed, with exceptions</u> , in Wilderness, Wild River, and Minimal Management <u>May be authorized</u> in Moderate and Intensive Management	For exceptions, see section 2.4.13.1
Helicopters	<u>May be permitted</u> but only by special use permit	<u>Not allowed</u> with exceptions	For exceptions, see section 2.4.14.3
All Weather Roads	<u>Not permitted except according to Title XI of ANILCA</u> in Wilderness, Wild River, and Minimal Management Moderate and Intensive Management: <u>Not provided; may be permitted subject to Title XI of ANILCA</u>	<u>Not allowed</u> in Wilderness, Wild River, and Minimal Management <u>May be allowed</u> in Moderate and Intensive Management	

Management Topic	Alternative A: 1988 Plan	Alternatives B, C, D, E, & F: Revised Plan	Comments
Unimproved Roads	<u>Not permitted except according to Title XI of ANILCA</u> in Wilderness, Wild River, and Minimal Management <u>Not provided; may be permitted subject to Title XI of ANILCA</u> in Moderate and Intensive Management	<u>Not allowed</u> in Wilderness, Wild River, and Minimal Management <u>May be allowed</u> in Moderate and Intensive Management	
Constructed and Maintained Landing Areas	Primitive landing areas may be designated; no new construction allowed	<u>Not allowed</u> in Wilderness, Wild River, and Minimal Management <u>May be allowed</u> in Moderate and Intensive Management	See section 2.4.16
Boat Launches and Docks (public use)	<u>Not permitted</u> in Wilderness, Wild Rivers, and Minimal Management	Not allowed	
Visitor Contact Facilities	<u>Not provided</u> in Wilderness, Wild Rivers, Minimal, and Moderate Management	<u>Not allowed</u> in Wilderness, Wild River, and Minimal Management <u>May be allowed</u> in, Moderate and Intensive Management	
Administrative Field Camps: Temporary facilities for habitat/population management	<u>Permitted</u> in Minimal, Moderate, and Intensive Management	<u>May be allowed</u> in Minimal, Moderate, and Intensive Management	
Administrative Field Sites: Permanent facilities for habitat/population management	<u>Permitted</u> in Minimal, Moderate, and Intensive Management	<u>Use of existing sites allowed</u> including replacement of existing facilities as necessary; <u>new sites may be allowed</u> in all categories	For exceptions, see sections 2.3.4 and 2.4.20
Other Geophysical Studies	<u>May be permitted</u> subject to Refuge special use permit conditions in Wilderness	<u>Not allowed</u> in Wilderness	For exceptions, see section 2.4.18.2
Sand and Gravel	<u>Not permitted</u> in Moderate Management	<u>May be authorized</u> in Moderate Management	
Commercial Fishery Support Facilities At or below 1979 levels	<u>May be permitted</u> subject to reasonable regulation and provisions of ANILCA	<u>Not applicable</u>	See section 2.4.18.3

Management Topic	Alternative A: 1988 Plan	Alternatives B, C, D, E, & F: Revised Plan	Comments
Commercial Fishery Support Facilities Above 1979 levels	In Wilderness, <u>may be permitted</u> subject to reasonable regulation and provisions of ANILCA	<u>Not allowed</u> in Wilderness	See section 2.4.18.3
Commercial Timber and Firewood Harvest	<u>Not permitted</u> in Wild River and Minimal Management	<u>May be authorized</u> in Wild River and Minimal Management, but only if necessary to accomplish objectives in approved Fire Management Plan	See section 2.4.18.4

3.3.3 Comparison of Wilderness Management and Minimal Management Categories

Table 3-3 explains key differences between Wilderness Management and Minimal Management according to the management policies and guidelines in Chapter 2. Wilderness designation represents a more permanent commitment to perpetuating natural conditions and processes and wilderness-associated recreational opportunities. The most important difference is that Minimal Management is an administrative management category that can be changed by the Service through a Plan amendment, while lands under Wilderness Management have statutory protection that can only be changed by Congress. The purposes of the Wilderness Act are within and supplemental (i.e., additional) to Refuge purposes in designated Wilderness. A Minimum Requirement Analysis (MRA) is required for Refuge management activities conducted in areas under Wilderness Management; MRAs are not required for Minimal Management. Please refer to the management policies and guidelines in Chapter 2 (Sections 2.2, 2.3, and 2.4), for descriptions of the management categories and for detailed information about allowable uses and activities within each management category.

Table 3-3. Key differences between Minimal and Wilderness Management categories¹

Topic	Minimal Management	Wilderness Management
Management of Area	Managed under ANILCA and other laws and policies	Managed under the Wilderness Act, the exceptions provided by ANILCA, the Service's Wilderness Stewardship Policy, and other laws and policies
Purposes	Managed to achieve establishing purposes of the Refuge	Managed to achieve establishing purposes of the Refuge and Wilderness Act purposes
Refuge Management Activities	No MRA required	MRA required for all Refuge management activities
	Mechanized and motorized equipment may be allowed when overall impacts are temporary or its use furthers management goals.	Mechanized and motorized equipment would be subject to an MRA or where ANILCA provides exceptions
Public Access	Cleared aircraft landing areas may be allowed ²	Existing cleared aircraft landing areas allowed to remain, but new cleared areas not allowed
Public Use, Recreation, and Outreach Activities	New commercial cabins may be authorized ³	New commercial cabins are not allowed
Public Use of Motorized Generators and Water Pumps	May be allowed	Not allowed
Commercial Activities or Uses	Geophysical exploration and seismic studies, core sampling, and other geophysical studies may be authorized outside the coastal plain (1002 Area)	Geophysical exploration and seismic studies, core sampling, and other geophysical studies not allowed
	Transportation and utility systems may be authorized by the Service through a Plan amendment	Transportation and utility systems may be authorized subject to Presidential and Congressional approval

¹ See Chapter 2, Section 2.3.3 Minimal Management, Section 2.3.4 Wilderness Management, and Section 2.4.20 Management of Designated Wilderness

² May be allowed: Activity, use, or facility may be allowed subject to site-specific NEPA analysis, an appropriate use finding (when required), a specific Refuge compatibility determination (when required), and compliance with all applicable laws and regulations of the Service, other Federal agencies, and the State.

³ May be authorized: Activity, use, or facility only allowed with a required special use permit or other authorization.

3.4 Evaluation of Alternatives

3.4.1 Evaluation Criteria

The alternatives described in this chapter were evaluated against six criteria based on existing laws, policies, and guidelines. These criteria were selected as being the most important factors for evaluating the alternatives discussed in this Plan and for selecting the best option for Arctic Refuge.

- How well does the alternative satisfy the purposes of Arctic Refuge and other provisions of ANILCA?
- How well does the alternative satisfy the mission of the Refuge System?
- How well does the alternative contribute to meeting the goals of the Refuge?
- How does the alternative address the issues and concerns identified during scoping?
- How well does the alternative maintain biological integrity, diversity, and environmental health at the Refuge and ecosystem scales and contribute to managing the Refuge as part of an ecosystem?
- How well does the alternative promote relationship building, long-term partnering, and sharing of resources in the region?

The differences among the alternatives are relatively small. With few exceptions, each action alternative (Alternatives B through F) varies only slightly from the current management direction described under Alternative A. Therefore, the differences between Alternatives B through F in meeting the evaluation criteria are minor. Alternatives that would clearly not meet the purposes of the Refuge or the missions of the Refuge System and the Service were not developed. Scoping did not identify any major issues that would result in substantial changes in management direction for Arctic Refuge.

3.4.2 Response to Refuge Purposes

An important criterion used in evaluating the alternatives is the degree to which the alternatives achieve the purposes of Arctic Refuge as mandated by ANILCA, and where applicable PLO 2214 (Chapter 1, Section 1.4), and other mandates found in law and policy (Chapter 1, Sections 1.2.3 and 1.3, and Appendix A).

Alternatives B through F would adopt the goals, objectives, management policies, and guidelines described in Chapter 2, Sections 2.1 through 2.5. These alternatives support the Refuge purposes to: conserve fish and wildlife populations and habitats in their natural diversity; provide for continued subsistence opportunities; preserve water quality and quantity; and meet international treaty obligations. These alternatives also support the preservation of wildlife, wilderness, and recreational values in the lands and waters of the old Arctic Range. Alternatives B, C, D, and E could provide a higher level of habitat conservation by recommending additional lands for Wilderness status. Alternatives C and E could provide more protection of wilderness values in the Refuge's coastal plain. Water quality and other river values could achieve a higher level of protection for those rivers recommended for inclusion in the NWSRS. Alternative E recommends more lands and waters for these special designations than any of the other alternatives.

Under all alternatives, Arctic Refuge would continue to provide hunting, fishing, trapping, wildlife observation and photography, and environmental education and interpretation opportunities to learn about wildlife and habitats on Refuge lands. Alternatives B, C, D, and E

have the potential to limit opportunities for commercial use by guides and transporters to a greater degree than the current management situation under Alternative A. Of all the alternatives, Alternatives B and C would be the most restrictive to commercial recreational guides using the Kongakut River.

3.4.3 Response to National Wildlife Refuge System Mission

All alternatives discussed in this Plan were developed to meet the mission of the Refuge System. Arctic Refuge plays a key role in conserving migratory birds, shorebirds, and waterfowl; salmon, Arctic char, grayling, and a variety of other fish species; Western Arctic and Porcupine caribou herds; and polar bears. Many other species such as grizzly bear, black bear, moose, Dall's sheep, muskox, wolf, and wolverine use the Refuge year-round. All the alternatives, in concert with the management direction described in Sections 2.3, 2.4, and 2.5 of this chapter, would continue to protect these species and their habitats in perpetuity.



3.4.4 Response to Refuge Goals

The goals and objectives for Refuge management described in Chapter 2, Section 2.1 reflect the purposes of the Refuge and the missions of the Refuge System and the Service. All the alternatives A through F would achieve the nine Refuge goals, although the alternatives differ in the specific management actions that would be employed to achieve the goals. All six alternatives conform to law and policy. Regardless of which action alternative is selected (B through F), the Service is committed to supporting the Refuge's goals and objectives, and will monitor each of them for achievement. If Alternative A is selected (the No Action alternative), the goals and objectives would not be adopted.

All alternatives promote partnerships and collaborations with the State of Alaska, local communities, and other public and private partners. All alternatives discussed in this Plan support subsistence, recreational, educational, and commercial services and would protect fish and wildlife resources and habitats. All alternatives would protect water resources and cultural resources.

Ecological condition, visitor experience, subsistence opportunities, and the tangible and intangible values of the Refuge would be maintained or improved if any of the Alternatives B through F, including all of their associated objectives and management guidelines, were to be selected.

3.4.5 Response to Issues

This section summarizes how the alternatives address the major planning issues identified during internal and public scoping.

3.4.5.1 Wilderness

The six alternatives explore different ways the Refuge could implement the wilderness review. Alternatives A and F would not recommend any additional lands for Wilderness designation and would rely on current management (Alternative A) or the management policy and guidelines presented in Chapter 2, Sections 2.4 and 2.5 (Alternative F) to maintain wilderness characteristics and values for Refuge lands and waters not currently designated as Wilderness. Alternatives B through E would recommend different combinations of WSAs for inclusion in the NWPS, with Alternative E recommending nearly all currently undesignated lands.

The act of recommending Wilderness would not change the underlying management category, nor would it necessarily result in congressional designation of Wilderness. Should Alternatives B, C, D, or E be selected, any lands recommended for Wilderness designation would continue to be managed according to the Minimal Management category outlined in Chapter 2, Section 2.3.3 and the management objectives presented in Chapter 2, Section 2.1. Only if Congress decides to designate recommended lands for inclusion in the NWPS would the underlying management category change from Minimal Management to Wilderness Management (Chapter 2, Section 2.3.4), at which time the purposes of the Wilderness Act would become within and supplemental to Refuge purposes. The Refuge would then manage these lands in accordance with the Wilderness Act, subject to the exceptions found in ANILCA.

3.4.5.2 Wild and Scenic Rivers

The six alternatives explore different ways the Refuge can manage the waters and values for rivers found suitable for inclusion in the NWSRS. Alternatives A and F would not recommend any rivers for inclusion in the NWSRS and would rely on current management (Alternative A) or the management policy and guidelines presented in Sections 2.4 and 2.5 of Chapter 2 (Alternative F) to maintain each river's values. Under Alternatives B, C, D, and E, different combinations of rivers would be recommended for the NWSRS. Alternative E would recommend the largest number of rivers and the most river corridor acreage of all the alternatives.

Any rivers recommended through the record of decision of the Revised Plan would continue to be managed according to Minimal or Wilderness Management categories (Chapter 2, Sections 2.3.3 and 2.3.4) and the management objectives listed in Chapter 2, Section 2.1. Only if Congress were to designate some or all of the recommended rivers would the underlying management category convert to Wild River Management (Chapter 2, Section 2.3.5). For those wild rivers, or segments of wild rivers, flowing through designated Wilderness, the more restrictive provisions of the Wild and Scenic Rivers Act and the Wilderness Act would apply.

3.4.5.3 Kongakut River Visitor Management

The six alternatives build upon each other to offer different approaches to managing visitor use in the Kongakut River valley. Options included in the alternatives are those that the Refuge could implement without promulgating regulations. Alternative A would maintain current management, which includes special use permit conditions, occasional compliance checks and monitoring of resource conditions and visitor experience, group size limits for commercial groups, and developing a Refuge-wide Public Use Management Plan. Alternatives B and C would retain all current management and add the following activities: increase outreach; publish a schedule of guided launches; conduct site rehabilitation; and address additional Kongakut River visitor management in the context of a Refuge-wide, Visitor Use Management step-down plan. Additionally, Alternatives B and C would set an interim cap on commercial recreation guides; it would run from 2013 until 2016, or until the required Visitor Use Management Plan is completed. Alternatives D, E, and F would include all the management activities identified in Alternatives A, B, and C, except there would be no interim cap on commercial recreation guides.

3.4.6 Response to Biological Integrity and Ecosystem Management

Service policy (601 FW 3) provides refuge managers with direction for assessing biological integrity, as well as maintaining and restoring biological integrity, diversity, and environmental health. Alternatives B through F, in concert with the management direction described in Chapter 2, Sections 2.4 and 2.5, would support the Service's policy on biological integrity. Should Alternative A be selected, the Refuge would have to comply with policy 601 FW 3, but the management direction adopted under this alternative (i.e., the management direction in the 1988 Plan) does not spell out how to achieve the policy.

The National Wildlife Refuge System Improvement Act of 1997 initiated an ecosystem approach to refuge management (Appendix A). Ecosystem management acknowledges that all living organisms (including people and their communities), the physical environment, and the

ecological processes that sustain them are interconnected. A given ecosystem can be described as the intersection of natural forces, social relations, and the full range of meanings and values that people assign to the landscape (Williams and Patterson 1999). Ecosystems are not limited by land ownership or the boundaries of conservation units and human communities. Hence, Refuge planning and management should always take into account surrounding public and private lands, strive to maintain existing conservation partnerships, and seek opportunities to work with new partners. All the alternatives proposed in this Plan would support these principles of ecosystem management and contribute to maintaining the health of intact ecosystems in Alaska.

3.5 Selection of Preferred Alternative

After a thorough analysis of environmental, social, and economic considerations, the regional director selected Alternative E as the preferred alternative. Alternative E would: adopt the goals, objectives, management policies, and guidelines described in Chapter 2; recommend an additional 12.28 million acres of the Refuge for inclusion in the National Wilderness Preservation System (NWPS); recommend an additional four rivers for inclusion in the National Wild and Scenic Rivers System (NWSRS); and implement interim management measures to address visitor use of the Kongakut River pending completion of a Refuge-wide Visitor Use Management Plan.

3.5.1 *Factors Considered in the Decision*

Before selecting Alternative E, the Service reviewed and considered the direct, indirect, and cumulative effects of each of the Plan's six alternatives (see Chapter 5); relevant issues, concerns, and opportunities; input received throughout the planning process, including advice from technical experts and public comments on the draft Plan/EIS; and other factors, including Refuge purposes and relevant laws, regulations, and policies. Alternative E addresses a variety of needs, including protection of fish and wildlife populations and their habitats and providing opportunities for fish and wildlife-dependent recreation, subsistence, and other public uses. Alternative E contributes significantly to achieving the Refuge's purposes and goals, and strengthens the monitoring of fish, wildlife, habitat, and public uses on the Refuge to provide a means to better respond to changing conditions in the surrounding landscape.

3.5.2 *Goals and Objectives*

The goals and objectives adopted under Alternative E are rooted in the purposes, vision statement, and special values of the Refuge (Chapter 1) and they serve to prioritize Refuge management and the work of the staff for the next 15-20 years. The objectives and strategies outline specific actions the Refuge will take to ensure the lands and waters within the Refuge continue to support fish, wildlife, plants, and their habitats for the benefit of present and future generations while providing for subsistence opportunities and wildlife-dependent recreational opportunities, including opportunities for hunting, fishing, wildlife observation and photography, and environmental education and interpretation. The objectives and strategies promote building relationships and developing long-term partnerships.

3.5.3 *Management Policies and Guidelines*

Alternative E updates the management direction of the 1988 Plan with the management policies and guidelines detailed in Chapter 2 of the Revised Plan. The revised management policies and guidelines incorporate current laws, regulations, and policies and provide broad management direction for Refuge programs and activities.

3.5.4 Wilderness

The public provided the Service with many opinions about whether to recommend additional Wilderness within the Refuge, and hundreds of thousands of the public comments we received were in support of additional Wilderness in Arctic Refuge. While Minimal Management provides similar management tools as Wilderness Management, Minimal Management is an administrative management category that can be changed by the Service through a Plan amendment. Lands under Wilderness Management have statutory protection that can only be changed by Congress, and only Congress can designate Wilderness. By recommending an additional 12.28 million acres of Refuge land and water for Wilderness designation, Alternative E strives for a more permanent commitment to perpetuating the Refuge's natural conditions and processes and wilderness-associated recreational opportunities. However, until Congress makes a decision, the 12.28 million recommended acres will continue to be managed under Minimal Management.

3.5.4.1 Wilderness and Refuge Purposes

Wildlife – Wilderness designation would provide the greatest long-term assurance that the Refuge's wildlife and natural diversity would be perpetuated. Wilderness designation would generally preclude alterations of habitats to favor one species over another and would best protect the Refuge's free-functioning ecological systems and natural processes, with exceptions for management emergencies (see Chapter 2, Section 2.4.2).

Subsistence – Wilderness designation would provide long-term protection for the lands, wildlife, and other resources on which subsistence users depend and would serve to perpetuate the natural conditions in which the region's Native cultures evolved.

International Treaty Obligations – Wilderness designation would enhance long-term protections for all indigenous wildlife, including treaty species.

Water Resources – Wilderness designation would provide an additional layer of protection for water resources in the Refuge.

3.5.5 Wild and Scenic Rivers

Alternative E would recommend the Atigun, Marsh Fork Canning, Hulahula, and Kongakut rivers for inclusion in the NWSRS. These four rivers all have outstandingly remarkable recreational values, and all four rivers are being impacted by public use (such as emerging trails, hardened campsites, human waste accumulation, etc.). The Wild and Scenic Rivers Act would provide a suite of management tools that would help the Refuge better manage each of these river corridors. If Congress were to include these rivers in the NWSRS, the Refuge would prepare Comprehensive River Management Plans specific to each of the four rivers. These plans would: describe the existing resource conditions in the river corridor; define the goals and desired conditions for protecting river values; address the types and amounts of public use the river area can sustain (i.e., user capacities); address water quality issues and instream flow requirements; and include a monitoring strategy to maintain desired conditions. Until Congress makes a decision, under Alternative E the Refuge will maintain the free-flowing condition, water quality, recommended classification (i.e., wild), and the outstandingly remarkable and other values of the four rivers by implementing the interim management prescriptions described in Appendix I of the Revised Plan. Under these interim measures, the

Refuge could implement administrative management actions to maintain river values within the corridors.

3.5.6 Kongakut River Visitor Management

The public expressed strong interest in the Service taking meaningful steps towards addressing the degradation of resources and visitor experience in select areas of the Refuge, such as within the Kongakut River corridor. Alternative E implements a series of management actions that can be taken now, without promulgating regulations, to improve visitor experience and resource conditions in the Kongakut River valley. These interim measures include: working with guides to reduce visitor volume and to disperse flights; publishing a launch schedule; developing new outreach materials with targeted messages; increasing enforcement of permit conditions and refuge regulations; and identifying and repairing degraded sites. An interim cap on commercial recreational guides is not included in Alternative E. The interim measures will remain in effect until a Refuge-wide Visitor Use Management Plan is completed.

3.5.7 Conclusion

Alternative E addresses the key issues and concerns identified during the planning process and will best achieve the purposes of the Refuge, the mission of the Refuge System, and maintain the Refuge's special values. Arctic Refuge serves a distinctive function in the Refuge System as a landscape that is essentially unaltered and free-functioning, contains outstanding natural diversity, and provides a benchmark for wilderness qualities and for perpetuating biological integrity, diversity, and environmental health. Alternative E provides assurance that the Refuge's special values and distinctive function will be protected and perpetuated for future generations.

